

FITZGERALD
HIBURG
68-69



Cat.
1968/69

FITCHBURG STATE
COLLEGIANA ARCHIVES
COLLECTION

NON-CIRCULATING

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THE STATE COLLEGE AT FITCHBURG

The State College at Fitchburg was established as a normal school under Chapter 457, Acts of 1894 of the General Laws of the Commonwealth of Massachusetts. It became a State Teachers Colleges in 1933 and a State College in 1962. The college now offers the degrees of Bachelor of Arts, Bachelor of Science in Education, Nursing, and Medical Technology and the degree of Master of Education.

Located on the northern side of the city, the College has an attractive campus to which several buildings have been added in the last half dozen years. The newest building is an eleven-story dormitory for women.

In October, 1963 the Library moved into its quarters on the two floors of the Administration Building. It contains about 50,000 volumes, subscribes to nearly 500 periodicals, and has a record collection of over 1,000 musical and non-musical records. The Library also includes a basic reference collection of the best children's books of all times, and special emphasis is placed on books for students in the fields of nursing, guidance, and retarded children. An effort is made to supply needed materials in every area by weekly additions to the Library.

One of the unique features of the campus is the laboratory school system for children, grades one through nine. The Fitchburg State College junior high school is the only training school of its type in Massachusetts.

The current enrollment of the college is more than 1,800 students. The curricula available to students include work in Elementary, Junior High and Secondary Education, Industrial Arts, Special Education for Teachers of the Mentally Retarded, Nursing and Medical Technology; and Bachelor of Arts programs in Biology, English, History and Physics. The college expects to offer a Bachelor of Arts program in Chemistry in the near future. The Industrial Arts program is one of the oldest in the nation and the leader in New England. While increasingly more students are taking their degree in Arts and Science, at present about 80% of the graduates of Fitchburg State College enter teaching.

STUDENT ORGANIZATIONS AND ACTIVITIES

Students at Fitchburg are fortunate to be in a progressive community and an area rich in cultural, social, and religious activities; within easy traveling distance of such important cities as Worcester, Boston, and New York; and in a vacation land famed for its year-round beauty and sports.

All students belong to the Student Government Association, which coordinates all student activities. The next largest campus units are the four undergraduate class organizations (Freshman, Sophomore, Junior, Senior) which are responsible for a variety of activities

including dances, picnics, shows, and the like. Other campus groups, varying in size and function, aid in enriching student life at the college.

These include:

ALPHA PHI OMEGA	MEN'S DORMITORY BOARD
BAND	MEN'S INTRAMURAL BOARD
BIOLOGY CLUB	NEWMAN CLUB
CHEERLEADERS	RIFLE CLUB
COMMUTERS BOARD	SAXIFRAGE
DRAMATICS CLUB	SCRABBLE CLUB
EPSILON PI TAU (Industrial Arts honor society)	SKI CLUB
FORUM CLUB	SPECIAL EDUCATION CLUB
GLEE CLUB	S.T.E.A.M. (Student Teachers Edu- cation Association of Mass.)
HOST and HOSTESS CLUB	STUDENT CHRISTIAN ASSOCIATION
INDUSTRIAL ARTS CLUB	WOMEN'S ATHLETIC ASSOCIATION
JUDAIC CLUB	WOMEN'S DORMITORY BOARD
KAMPUS VUE (Newspaper)	
LOGOS HONOR SOCIETY (male)	
MEN'S ATHLETIC ASSOCIATION	

Local cultural activities also include the Fitchburg Regional Community Concert Association, offering special student memberships, while the Student Government Association, through its Cultural Events Committee, provides outstanding figures in the arts and sciences.

Athletically, for male students there is interscholastic competition in soccer, basketball, track, and tennis with fellow members of the New England Teachers College Athletic Conference and other colleges, as well as in golf, while the men's intramural athletic program includes competition in soccer, touch-football, basketball, and softball. The Women's Athletic Association provides major interscholastic and intramural sports in field hockey, volley ball, basketball, and softball; other sports offered are archery, tennis, badminton, and bowling.

ADMISSION OF STUDENTS

Fitchburg State College endeavors to offer admission to those candidates whose high school records and backgrounds promise a successful and satisfying college experience. Each applicant for admission is considered individually, and the decision of the Committee on Admissions is based on the following factors: the high school record, the recommendation of the school authorities, and the scores on tests administered by the College Entrance Examination Board.

The admissions decisions exclude consideration of an applicant's race, religion or national origin.

ENTRANCE REQUIREMENTS

Applicants must be graduates of a four-year high school (or be able to offer acceptable equivalent preparation). Sixteen units are required: English (4), Mathematics (2), American History and Government (1), Science (1), electives (8). A unit represents five class periods a week for a year. College preparatory work is preferred. Applicants for the Bachelor of Arts degree must also present two units of a single foreign language.

Each applicant must take the Scholastic Aptitude Test of the College Entrance Examination Board and three Achievement Tests, one of which must be the English Test. These should be taken no later than December or January of the senior year. Applicants who expect to continue a foreign language in college are strongly urged to take an Achievement Test in that language. Junior year SAT scores are acceptable. It is the student's responsibility to instruct the College Board to forward the results of the tests to Fitchburg State College.

A recommendation and a personality record from the high school principal or guidance director are required.

The applicant must be in good health, as evidenced by a physical examination report completed by the applicant's physician. The necessary form is supplied by the College at the time of acceptance.

APPLICATION PROCEDURE

The College Admissions Office must have the following Admissions Credentials in order to consider an applicant:

1. A completed application form.
2. The secondary school record and personality record.
3. Recommendation by the high school principal or guidance director.
4. C.E.E.B. test results.

Application forms may be obtained from College's Admissions Office or, in many cases, from the high school guidance office. All State Colleges use the same application form.

Applications should be submitted as early as possible after the first marking period of the senior year in high school. It is recommended that the application be completed in cooperation with the local guidance officer and be accompanied by a transcript which includes the first period senior marks and the high school's rating of the student's personal characteristics. Receipt of the application or transcript cannot be acknowledged unless a stamped, self-addressed postal card is enclosed.

The applicant should arrange for the forwarding of the necessary College Board test scores directly to the College from the Educational Testing Service in Princeton, New Jersey.

When the application, transcript, recommendation, and the College Board scores have been reviewed, the applicant will be notified if there is any further information required. No action can be taken by the College until the candidate's file is complete.

Applications are accepted starting in October, and in order to be given full consideration the application and its supporting credentials should be received no later than March 1.

INTERVIEWS

Interviews are not normally required and are not part of the selective process. However, applicants desiring to have an interview at the Admissions Office and to visit the campus are encouraged to write for an appointment. Such interviews cannot be scheduled on Saturdays or holidays.

NOTIFICATION OF ADMISSION

Upon acceptance, candidates are notified by the College Admissions Office starting about February 1. Housing arrangements, if available, are included in the admissions notification.

Freshmen are admitted to begin classes only in the fall semester.

TRANSFER STUDENTS

The admission of transfer students is normally done only for the fall semester and is necessarily limited to a few selected students with satisfactory academic and personal records.

Students seeking admission as transfers from another college must present the following credentials from it: a statement of honorable dismissal, an official transcript of the subjects taken and grades received, and a catalog, marked to show each subject that has been completed. Transfer applicants must also submit their high school transcript and the results of the College Entrance Examination Board Scholastic Aptitude Test.

Transfer credit will normally be granted for work completed in other accredited colleges which was of "C" average or better, and only in courses that parallel those offered at this College. This evaluation will be made by the Registrar only after an application has been acted upon, and if admission can be offered.

The transfer of students into the Nursing Program is not possible at this time; transfer into the Industrial Arts Program is possible only in the Summer Session, and the student's eligibility to continue thereafter depends upon both his achievement and the space available in the shop courses.

COLLEGE HOUSING

Residence hall accommodations are limited and are assigned, wherever possible, to Freshman candidates. Transfer students are considered on a "space available" basis only. Students *assigned* by the College to off-campus houses can arrange to board in the College dining hall.

VETERAN'S EDUCATION

Fitchburg State College is an approved institution for providing education for the returned veteran under Public Laws No. 346, No. 16, and No. 550.

STUDENT COSTS

The following list includes the essential campus expenses exclusive of such items as clothing, travel and amusement, for which a student should budget:

- I. APPLICATION FEE
\$5.00 (not refundable nor applicable on tuition).
- II. TUITION
 - A. For residents of Massachusetts: \$200.00 per year—payable in two installments of \$100.00 at the beginning of each semester.
 - B. For non-residents: \$600.00 per year—payable in two installments of \$300.00 at the beginning of each semester.
- III. REGISTRATION FEE
A Registration Fee of \$20.00 is required of all new students upon acceptance. It is not refundable, but is credited against the first semester tuition for students enrolling in the College.
- IV. STUDENT GOVERNMENT FEE
All students are required to pay a Student Government Fee of \$30.00 per year. This non-refundable charge, payable in September, supports the extra-curricular and organizational programs on campus.
- V. ROOM AND BOARD FOR RESIDENT STUDENTS
The cost of boarding is the same for everyone but the rooming cost depends upon the hall to which a student is assigned. The maximum charge at present is \$660.00 annually, and is payable in four installments.
A residence hall deposit of \$25.00 is required of all students accepted for rooming in a College dormitory. This payment, not refundable, is credited against the room and board charge.
- VI. TEXTBOOKS AND SUPPLIES
The cost of textbooks and supplies varies with the individual student. A safe estimate would be approximately \$150.00 per year.

VII. REFUNDS

Refunds for students leaving the College within six weeks after the beginning of the semester will be based on a regular, established schedule of refunds.

All fees are subject to adjustment by the Board of Trustees of the State Colleges with changing costs of operation.

FINANCIAL ASSISTANCE

The College participates in several Federal programs which are designed to provide financial assistance to students while in college. They are:

1. Educational Opportunity Grants—a program of direct grants which the student receives as a non-obligating award of funds, based on *exceptional financial need* and evidence of academic or creative promise.
2. College Work/Study—a program of employment in which the student, particularly one from a *low income family*, is compensated for the number of hours he works for the institution.
3. National Defense Student Loan and Nursing Student Loan Programs - programs of borrowing, primarily for *needy students*, in which the student has an obligation to repay his loan with low interest within a ten-year period following college attendance. Under certain conditions, portions of the loan may be cancelled for teaching or nursing service.

The State College at Fitchburg is authorized to grant Special Education Scholarships, not exceeding \$300.00 per year, to students who plan to *teach mentally retarded children*. Applicants must qualify for admission to, or be in full-time attendance at, Fitchburg. They must be graduates of Massachusetts high schools, needy, academically worthy, and domiciled in Massachusetts. Forms must be obtained from the Dean of Women or the Dean of Men and filed with them prior to May 15 for the following year.

The College also employs students to work on campus, and there are a limited number of scholarships for upperclassmen.

Please notice that establishment of need is basic to financial aid. The College participates in the College Scholarship Service of the College Entrance Examination Board in order to assess need as fairly as possible. *Each applicant for financial assistance must file a Parent's Confidential Statement with the College Scholarship Service prior to April 1st. These forms may be obtained from colleges, high schools, or the College Scholarship Service, P.O. Box 176, Princeton, New Jersey 08540.*

Additional information regarding financial aid may be obtained from the Dean of Women or the Dean of Men.

Information regarding financial assistance by or through the State may be obtained from the board of Higher Education Scholarship Office, 182 Tremont Street, Boston, Massachusetts 02111.

REQUIREMENTS FOR GRADUATION

1. Successful completion of all required courses and of the total semester hour requirements of the program.
2. A 2 or better cumulative average for the total program.
3. A 2 or better average in the major field.
4. A satisfactory record of attendance at required class activities.
5. The successful completion of a standard first aid course (except for nursing).
6. The completion of a minimum of 30 semester hours at the college.
7. All Teacher Education majors must take the National Teachers Examination before graduation.
8. Students graduating in June must file an application for graduation with the Registrar not later than February first of the year of graduation. Students graduating in August must file their application by June first.

REQUIREMENTS FOR STUDENT TEACHING

1. Satisfactory completion of the psychology sequence required in the specific curriculum.
2. Satisfactory completion of the required professional sequence of courses of the specific curriculum.
3. Achievement of a satisfactory level of speech in terms of pronunciation and grammar.
4. Indication of the necessary level of readiness and maturity for teaching as adjudged by faculty of the department.
5. Adequate preparation in terms of content:
 - a. Completion of a minimum of 30 S.H. with a 2 or better average in the major field; or 30 S.H. with subject matter field and related fields for Secondary majors.
 - b. No failures in the major subject area. (Failures should be removed by retaking the given course or a recognized substitute.) Evidence through personal interview by an Education Department staff member that the student has a sense of vocation in entering student teaching. (This might be supplemented by extra summer or vacation work in appropriate setting to further indicate interest in working with children.) Evidence of adequate health, both physically and mentally, to enter the teaching training period. (Here formal recommendations from the counseling staff and physical education staff might supplement any health records.)
 - c. Completion of at least 15 S.H. with a 2 or better average in the area of specialization for Elementary majors.
 - d. Completion of 46 S.H. of shop work with an average of 2 or better in the Industrial Arts curriculum.

WITHDRAWAL FROM CLASS

A student who wishes to drop a course must obtain the permission of the Registrar. Any student who fails to do this will automatically receive a WF for the course. However, a student who is in good standing in a course who finds it necessary to discontinue the course before midsemester warnings have been issued will receive a W for the course if he makes the proper arrangement. A student who is failing a course will receive a WF.

Normally a student who drops a course after midsemester warnings will receive a WF. However, a student with a 2 or better average who must lighten his load or drop out of college due to extensive illness or serious accident will receive a W regardless of time of withdrawal.

WITHDRAWAL FROM COLLEGE

A student must report to the Dean of Men, Dean of Women or the Registrar and obtain a withdrawal form. This must be properly signed by all persons through whom he checks out and returned to the Office of the Registrar.

A student who drops out of college without doing this will receive a WF for all of his courses.

PARKING REGULATIONS

Parking facilities at Fitchburg State College are minimal.

Commuting students are required to park on public streets or to obtain parking permits which allow them to park in student lots on campus on a first-come, first-served basis.

Resident students are not permitted to have vehicles on campus with the exception of seniors, and students whose teaching or nursing assignments require transportation.

Sophomore and junior resident students who use personal cars for transportation to and from home, or for reasons of work or the like, must arrange off-campus storage and file evidence thereof with the Dean of Men.

Freshmen resident students are not allowed to keep vehicles in the area.

OTHER REQUIREMENTS AND REGULATIONS

Other requirements and regulations of this college will be found in the student handbooks.

DEGREE PROGRAMS

The State College at Fitchburg is empowered to grant four degrees: Bachelor of Science in Education, Bachelor of Science in Nursing, Bachelor of Arts, and Bachelor of Science in Medical Technology. Available through the Evening College is the degree of Bachelor of Science in Industrial Science.

Students preparing to be teachers are candidates for the Bachelor of Science in Education. They may major in Elementary Education, Industrial Arts, Special Education, or Secondary Education. Students also have a subject matter major selected from one of the following fields: Biology, Chemistry, English, Geography, History, Mathematics, or Physics.

Candidates for the Bachelor of Arts degree may major in Biology, English, History, or Physics.

Students in all curricula complete a common core of credits in general education distributed as follows: English, Speech, Science and Mathematics, Social Science, Fine Arts, Introduction to Knowledge, Behavioral Science, Philosophy.

The balance of credits is distributed among major, elective, and professional courses.

TEACHER TRAINING CURRICULA

Students preparing to teach follow a curriculum which leads to a B.S. in Education degree. Four basic areas of concentration are offered: Elementary Education, Special Education (mentally retarded), Industrial Arts and Secondary Education. Students specializing in secondary education may select one of the following majors: Biology, Chemistry, English, Geography, History, Mathematics, Physics.*

Students in all these curricula have a semester of student teaching. This occurs in the last semester of the junior year or first semester of the senior year in the Industrial Arts curriculum. In all other curricula it occurs in the first or second semester of the senior year. Because classes are divided in half for this activity the sequence of semesters of the junior and senior year varies to provide optimum pre-training preparation.

*All Elementary majors must complete 15 semester hours beyond the required courses to fulfill specialization. The following areas are available: Art, Foreign Language, Geography, History, Language Arts, Mathematics, Music, Science, Library Science (through division of continuing studies).

EXPLANATION OF COURSE NUMBERS

- 01-09 Non-credit courses.
 10-19 First courses in given area of general education series.
 20-29 Second courses in given area of general education series.
 30-69 Elective courses.
 70-89 Professional courses.
 90-99 Independent study and honor courses.

BACHELOR OF SCIENCE IN EDUCATION

ELEMENTARY CURRICULUM

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
*History of Civilization	3	History of Civilization II	3
Biology I	3	Biology II	3
Mathematics I	3	Mathematics II	3
Art of Music I	3	Survey of Art Forms I	3
Speech	2	Introduction to Man and His Knowledge II	1
Introduction to Man and His Knowledge I	1	Physical Education II	0
Physical Education I	0		
	<hr/>		<hr/>
	18		16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
**Literature I	3	Literature II	3
U.S. History I	3	U.S. History II	3
Physical Science I	3	***Introduction to Geography	3
General Psychology	3	Art in Elementary Education	2
Applied Music	1	Elective	3
Elective	3	Elective	3
Physical Education III	0	Physical Education IV	0
	<hr/>		<hr/>
	16		17

*Students taking a foreign language specialization should begin this in their freshman year.

**Choice of 6 hours of one of the following: English, American or World Literature.

***Students taking a geography specialization must take geography in the first semester.

Junior Year

First Semester	S.H.	Second Semester	S.H.
Child Growth and Development	3	Introduction to Philosophy	3
General Methods	3	Science in Elementary Education	2
Reading in Elementary Education	3	Mathematics in Elementary Education	3
Educational Measurements	3	Music in Elementary Education	2
Electives	6	Instructional Material in Elementary Education	2
Handwriting	0	Physical Education in Elementary Education	1
	18	Elective	3
			16

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching in Elementary Education	12	Regional Geography	3
	12	Introduction to Sociology	3
		First Aid	0
		Electives	9
		First Aid	0
			15

BACHELOR OF SCIENCE IN EDUCATION
MAJOR IN TEACHING SPECIAL EDUCATION

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
Mathematics I	3	Art of Music I	3
General Psychology	3	Human Growth and Development	3

Introduction to Man and His Knowledge I	1	Speech	2
Physical Education I	0	Introduction to Man and His Knowledge II	1
	<hr/>	Physical Education II	0
	16		<hr/>

18

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Physical Science I	3	Physical Science II	3
Mathematical Concepts	3	Nature and Needs of Mentally	
Introduction to Geography	3	Retarded	3
Applied Music	1	Exceptional Children	4
Industrial Arts for Special Education	3	Home Arts	3
Physical Education III	0	Physical Education IV	0
	<hr/>		<hr/>
	16		16

Junior Year

First Semester	S.H.	Second Semester	S.H.
Children's Literature	3	Art in Elementary Education	2
U.S. History and Constitution	3	Methods of Teaching	
Survey of Art Forms I	3	Mentally Retarded	3
Introduction to Speech Disorders	3	Curriculum for Mentally	
Music in Special Education	2	Retarded	3
Elective	3	Reading Methods in Special	
	<hr/>	Education	3
	17	Educational Measurements	3
		Elective	3
		Handwriting	0
			<hr/>
			17

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching	12	Introduction to Sociology	3
	<hr/>	Introduction to Philosophy	3
	12	Principles of Guidance	3

*See second footnote, p. 19.

Electives	6
First Aid	0
<hr/>	
	15

SECONDARY EDUCATION

All students preparing to teach secondary school follow the same basic curriculum in terms of general education and professional courses. The sequence of these courses varies with the major in order that ample opportunity to build a strong subject matter field can be provided. Details of requirements in terms of specific electives, prerequisites, and numbers of electives will be found under the appropriate subject matter headings.

BACHELOR OF SCIENCE IN EDUCATION

BIOLOGY MAJOR

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization	3	History of Civilization II	3
Botany I	3	Botany II	3
General Chemistry I	3	General Chemistry II	3
Algebra and Trigonometry	3	Analytic Geometry	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
<hr/>		<hr/>	
	16		16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Organic Chemistry I	4	Biology Electives	6
Trends in American Education	3	Chemistry Electives	3
Biology Electives	6	General Psychology	3
Physical Education III	0	Speech	2
<hr/>		Physical Education IV	0
	16		17

*See second footnote, p. 19.

Junior Year

First Semester	S.H.	Second Semester	S.H.
Physics I	3	Introductory Physics II	3
Adolescent Psychology	3	Introduction to Sociology	3
Art of Music I	3	Educational Measurements	3
Biology Elective	3	General Methods	3
General Methods	3	Biology Electives	6
	15		18

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching	9	U.S. History and Constitution	3
Special Methods	3	Introduction to Geography	3
	12	Introduction to Philosophy	3
		Survey of Art Forms I	3
		Biology Elective	3
		First Aid	0
			15

BACHELOR OF SCIENCE IN EDUCATION

CHEMISTRY MAJOR

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
Algebra and Trigonometry	3	Analytic Geometry	3
General Chemistry I	3	General Chemistry II	3
History of Civilization I	3	History of Civilization II	3
General Psychology	3	Speech	2
Introduction to Man and His knowledge I	1	Qualitative Analysis	1
Physical Education I	0	Introduction to Man and His Knowledge II	1
	16	Physical Education II	0
			16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
Organic Chemistry I	5	Organic Chemistry I	5
Literature	3	Literature	3

General Physics I	4	General Physics II	4
Calculus I	3	Calculus II	3
Physical Education III	0	Physical Education IV	0
	15		15

Junior Year			
First Semester	S.H.	Second Semester	
Quantitative Analysis	4	Physical Chemistry I	3
Trends in American Education	3	Art of Music I	3
Science or Mathematics Elective	3	Science or Mathematics Elective	3
Adolescent Psychology	3	General Methods	3
Social Studies Elective	3	Educational Measurements	3
	16		15

Senior Year			
First Semester	S.H.	Second Semester	
Student Teaching	9	Instrumental Analysis	3
Special Methods	3	U.S. History and Constitution	3
	12	Introduction to Philosophy	3
		Survey of Art Forms I	3
		Social Studies Elective	3
		First Aid	0
			15

BACHELOR OF SCIENCE IN EDUCATION

ENGLISH MAJOR

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
Mathematics I or Chemistry I or Introductory Physics I	3	Mathematics II or General Chemistry II or Introductory Physics II	3
Introduction to Geography	3	General Psychology	3
Introduction to Man and His Knowledge	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	16		16

Sophomore Year

First Semester		Second Semester	
	S.H.		S.H.
English Literature I	3	English Literature II	3
World Literature I	3	World Literature II	3
Physical Science I	3	Physical Science II	3
Trends in American Education	3	Introduction to Philosophy	3
Speech	2	Elective	3
Reading in the Secondary School	3	Physical Education IV	0
Physical Education III	0		
	<hr/>		<hr/>
	17		

Junior Year

First Semester		Second Semester	
	S.H.		S.H.
U.S. History & Constitution	3	Survey of Art Forms I	3
Adolescent Psychology	3	General Methods	3
Electives	9	Educational Measurements	3
	<hr/>	Electives	6
	15	English Methods	2
	<hr/>		<hr/>
	17		

Senior Year

First Semester		Second Semester	
	S.H.		S.H.
Student Teaching in Secondary Education	9	Introduction to Sociology	3
English Methods	3	Art of Music I	3
	<hr/>	Electives	9
	12	First Aid	0
	<hr/>		<hr/>
	15		

BACHELOR OF SCIENCE IN EDUCATION

GEOGRAPHY MAJOR

Freshman Year

First Semester		Second Semester	
	S.H.		S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3

Mathematics I or General Chemistry I or Introductory Physics I	3	Mathematics II or General Chemistry II or Introductory Physics II	3
Introduction to Geography	3	General Psychology	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	16		16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Physical Science I	3	Physical Science II	3
Economics	3	Earth Science II or Geomorphology	3
Trends in American Education	3	Introduction to Philosophy	3
Speech	2	Elective	3
Elective	3	Physical Education IV	0
Physical Education III	0		
	17		15

Junior Year

First Semester	S.H.	Second Semester	S.H.
Literature Elective	3	U.S. History II	3
U.S. History I	3	Survey of Art Forms I	3
Adolescent Psychology	3	General Methods	3
Electives	6	Educational Measurements	3
	15	Elective	3
	15		

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching in Secondary Education	9	Introduction to Sociology	3
Geography Methods	3	Art of Music I	3
	12	Electives	9
	12	First Aid	0
	15		

*See second footnote, p. 19.

BACHELOR OF SCIENCE IN EDUCATION
HISTORY MAJOR

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
Mathematics I or General Chemistry I or Introductory Physics I	3	Mathematics II or General Chemistry II or Introductory Physics II	3
Introduction to Geography	3	General Psychology	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	16		16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
U.S. History I	3	U.S. History II	3
Physical Science I	3	Physical Science II	3
Introductory Economics	3	Political Science	3
Trends in American Education	3	Introduction to Philosophy	3
Speech	2	Physical Education IV	0
Physical Education III	0		
	17		15

Junior Year

First Semester	S.H.	Second Semester	S.H.
Literature Elective	3	Survey of Art Forms I	3
Adolescent Psychology	3	General Methods	3
Electives	9	Educational Measurements	3
		Electives	6
	15		15

*See second footnote, p. 19.

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching in Secondary Education	9	Introduction to Sociology	3
Special Methods	3	Art of Music I	3
		Electives	9
		First Aid	0
	12		15

BACHELOR OF SCIENCE IN EDUCATION**INDUSTRIAL ARTS MAJOR****Freshman Year**

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
*Mathematics I	3	*Mathematics II	3
Introduction to Woodworking	2	D.C. Circuit Fundamentals	2
Introduction to Technical Drawing	2	History of Mechanics	2
Introduction to Metals	2	Introduction to Design	2
Introduction to Typography	2	General Shop I	2
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	18		18

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
**Literature I	3	Literature II	3
General Chemistry I	3	General Chemistry II	3
General Psychology	3	Foundations of Industrial Arts I	2
Furniture Making	3	Graphic Arts	3
Engineering Drawing	3	A.C. Circuit Fundamentals	3
Machine Shop Processes	3	Internal Combustion Engines	3
Physical Education III	0	Physical Education IV	3
	18		17

*Algebra and Trigonometry and Analytic Geometry may be substituted.

**See second footnote, p. 19.

Junior Year

First Semester	Second Semester	S.H.	
General Physics	3	Student Teaching	9
Speech	2	Foundations of Industrial	
Adolescent Psychology	3	Arts II	3
Principles and Practices in Industrial Arts	3		
Structures	3		
Elective Shop	3		
	<hr/>	<hr/>	
	17	12	

Senior Year

First Semester	Second Semester	S.H.	
Art of Music I	3	Survey of Art Forms I	3
U.S. History and Constitution	3	Philosophy of Education	3
Introduction to Sociology	3	Economics	3
Introduction to Philosophy	3	Elective Shop (Wood,	
Elective Shop (Metal, Power, Electricity, Graphic Arts, Crafts)	3	Drawing, Graphic Arts, Electronics, Crafts, Metal-Power)	3
Elective	3	Elective	3
	<hr/>	<hr/>	
	18	First Aid	
		0	
		<hr/>	
		15	

BACHELOR OF SCIENCE IN EDUCATION

MATHEMATICS MAJOR

Freshman Year

First Semester	Second Semester	S.H.	
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
General Chemistry I	3	General Chemistry II	3
Algebra and Trigonometry	3	Analytic Geometry	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	<hr/>	<hr/>	
	16	16	

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
General Physics I	4	General Physics II	4
Linear Algebra	3	Calculus II	3
Calculus I	3	General Psychology	3
Trends in American Education	3	Introduction to Philosophy	3
Speech	2	Physical Education IV	0
Physical Education III	0		
			16
	18		

Junior Year

First Semester	S.H.	Second Semester	S.H.
U.S. History and Constitution	3	Introduction to Abstract Algebra	3
Modern Physics	3	Geometry II	3
Calculus III	3	Principles of Geography	3
Geometry I	3	General Methods	3
Educational Measurements	3	Survey of Art Forms I	3
Adolescent Psychology	3		
	18		15

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching in Secondary Education	9	Probability & Statistics I	3
Mathematics Methods	3	Introduction to Sociology	3
	12	Art of Music I	3
		**Elective	3
		***Elective	3
		First Aid	0
			15

*See second footnote, p. 19.

**Free Electives.

***Mathematics Elective.

BACHELOR OF SCIENCE IN EDUCATION
PHYSICS MAJOR

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
General Physics I	4	General Physics II	4
Algebra & Trigonometry	3	Analytic Geometry	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	<hr/> 17		<hr/> 17

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Modern Physics	3	PSSC Physics	3
General Chemistry I	3	General Chemistry II	3
Calculus I	3	Calculus II	3
Trends in American Education	3	General Psychology	3
Speech	2	Physical Education IV	0
Physical Education III	0		
	<hr/> 17		<hr/> 15

Junior Year

First Semester	S.H.	Second Semester	S.H.
U.S. History and Constitution	3	Survey of Art Forms I	3
Electronic Physics I	4	Electronic Physics II	4
Calculus III	3	General Methods	3
Introduction to Geography	3	Educational Measurements	3
Adolescent Psychology	3	Introduction to Philosophy	3
	<hr/> 16		<hr/> 16

*See second footnote, p. 19.

Senior Year

First Semester	S.H.	Second Semester	S.H.
Student Teaching in Secondary Education	9	Art of Music I	3
Physics Methods	3	Introduction to Sociology	3
	<hr/>	Physics Electives	4 or 8
		Elective	3
	12	First Aid	0
			<hr/>
			13 or 17

NURSING CURRICULUM

Students enrolled in this program earn a B.S. in Nursing degree and are prepared to take the licensing examination of the Board of Registration in Nursing. Upon completion of the examination they have the title of Registered Nurse.

In addition to the classes held on the college campus, clinical laboratory experiences and observations are carried on in selected agencies such as hospitals and public health organizations.

BACHELOR OF SCIENCE IN NURSING

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Chemistry I	3	Chemistry II	3
Anatomy and Physiology I	3	Anatomy and Physiology II	3
General Psychology	3	Introduction to Sociology	3
Introduction to Nursing I	1	Introduction to Nursing II	1
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	<hr/>		<hr/>
	17		17

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Foundations of Nursing I	4	Foundations of Nursing II	4
Foundations of Professional Relationships I	1	Foundations of Professional Relationships II	1

*See second footnote, p. 19.

Algebra and Trigonometry	3	Human Growth and	
Microbiology	3	Development	3
Speech	2	Nutrition	3
Physical Education III	0	Elective (Social Studies)	3
		Physical Education IV	0
	16		17

Junior Year

First Semester	S.H.	Second Semester	S.H.
*Medical-Surgical Nursing	12	*Maternal and Child Health	
Introduction to Pharmacology	2	Nursing	12
U.S. History and Constitution	3	Principles of Management	2
	17	Introduction to Philosophy	3
	15		17

Senior Year

First Semester	S.H.	Second Semester	S.H.
*Community and Mental		*Advanced Medical-Surgical	
Health Nursing	12	Nursing	9
Survey of Art Forms I	3	Nursing Seminar	2
Elective	3	Art of Music I	3
	18	Elective	3
	15		17

*May alternate either semester.

MEDICAL TECHNOLOGY CURRICULUM

Candidates for this program earn a B.S. degree in Medical Technology.

The senior year will be spent at Burbank Hospital, or another accredited School for Medical Technologists, where additional work in biology and chemistry will be given. Upon completion of this specialized training, the candidate will be qualified to take examinations leading to M.T. certification by the Board of Registry of the American Society of Clinical Pathologists.

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
Biology I	3	Biology II	3
General Chemistry I	3	General Chemistry II	3
Algebra and Trigonometry	3	Analytic Geometry	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	<hr/> 16		<hr/> 16

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Biology Elective	3	Biology Elective	3
Organic Chemistry I	5	Analytic Chemistry I	4
General Psychology	3	Introduction to Geography	3
Elective	3	Speech	2
Physical Education III	0	Elective	3
	<hr/> 17	Physical Education IV	0
			<hr/> 18

Junior Year

First Semester	S.H.	Second Semester	S.H.
U.S. History and Constitution	3	Biochemistry	3
Biology Electives	6	Introductory Physics II	3
Introductory Physics I	3	Introduction to Sociology	3
Art of Music I	3	Introduction to Philosophy	3
	<hr/> 15	Survey of Art Forms I	3
			<hr/> 15

Senior Year

32 credits given for 12 months in an approved hospital school of Medical Technology.

*See second footnote, p. 19.

LIBERAL ARTS CURRICULUM

The Liberal Arts Curriculum is designed for the student whose primary interest is in the Liberal Arts and Sciences. Beginning with the core of general education courses required of all students in the college, the candidate for the B.A. specializes in either Biology, Chemistry, English, History, or Physics and meets a required level of proficiency in a Foreign Language.

English and History majors in this curriculum may take a minor in another subject such as Art of Music, or they may freely choose from offerings of other departments without selecting any second area of concentration. Biology and Physics majors will need to use their electives for enrichment in related fields.

BACHELOR OF ARTS IN BIOLOGY

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
Biology I	3	Biology II	3
General Chemistry I	3	General Chemistry II	3
Algebra and Trigonometry	3	Analytic Geometry	3
Modern Foreign Language	3	Modern Foreign Language	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
16		16	

Sophomore Year

First Semester	S.H.	Second Semester	S.H.
*Literature I	3	Literature II	3
Organic Chemistry I	4	Chemistry Elective	3
Modern Foreign Language	3	Modern Foreign Language	3
Biology Electives	6	Biology Elective	3
Physical Education III	0	Speech	2
16		14	

*See second footnote, p. 19.

Junior Year

First Semester	S.H.	Second Semester	S.H.
History of Civilization I	3	History of Civilization II	3
Introductory Physics I	3	Introductory Physics II	3
Art of Music I	3	Biology Electives	6
Biology Elective	3	Elective	3
Elective	3		
	15		15

Senior Year

First Semester	S.H.	Second Semester	S.H.
Introduction to Sociology	3	U.S. History and Constitution	3
General Psychology	3	Introduction to Geography	3
Introduction to Philosophy	3	Survey of Art Forms I	3
Biology Elective	3	Biology Elective	3
Elective	3	Elective	3
	15		15

BACHELOR OF ARTS IN CHEMISTRY

Freshman Year

First Semester	S.H.	Second Semester	S.H.
English Composition I	3	English Composition II	3
Algebra and Trigonometry	3	Analytic Geometry	3
General Chemistry I	3	General Chemistry II	3
Foreign Language	3	Foreign Language	3
History of Civilization I	3	History of	
Introduction to Man and		Civilization II	3
His Knowledge I	1	Introduction to Man and	
Physical Education I	0	His Knowledge II	1
		Qualitative Analysis	1
		Physical Education II	0
	16		17

Sophomore Year

First Semester		Second Semester	
	S.H.		S.H.
Organic Chemistry I	5	Organic Chemistry II	5
General Physics I	4	General Physics II	4
Calculus I	3	Calculus II	3
Foreign Language	3	Foreign Language	3
Physical Education III	0	Physical Education IV	0
	15		15

Junior Year

First Semester		Second Semester	
	S.H.		S.H.
Quantitative Analysis	4	Physical Chemistry I	3
Literature	3	Literature	3
Mathematics Elective	3	Art of Music I	3
General Psychology	3	Social Studies Electives	6
Social Studies Elective	3		
	16		15

Senior Year

First Semester		Second Semester	
	S.H.		S.H.
Advanced Inorganic Chemistry	3	Instrumental Analysis	3
Physical Chemistry II	5	U.S. History and Constitution	3
Physics Elective	3	Introduction to Philosophy	3
Elective	3	Survey of Art Forms I	3
Speech	2	Advanced Topics in Chemistry or Independent Study	3
	16		15

BACHELOR OF ARTS IN ENGLISH

Freshman Year

First Semester		Second Semester	
	S.H.		S.H.
English Composition I	3	English Composition II	3
History of Civilization I	3	History of Civilization II	3
*Mathematics I or General Chemistry I or Introductory Physics I	3	*Mathematics II or General Chemistry II or Introductory Physics II	3

Art of Music I	3	Survey of Art Forms I	3
Foreign Language	3	Foreign Language	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	16		16

Sophomore Year

First Semester		Second Semester	
	S.H.		S.H.
English Literature I	3	English Literature II	3
World Literature I	3	World Literature II	3
U.S. History I	3	U.S. History II	3
*Biology I or Physical Science I or General Chemistry I	3	*Biology II or Physical Science II or General Chemistry II	3
Foreign Language or Elective	3	Foreign Language	3
Physical Education III	0	Speech	2
	15	Physical Education IV	0
			17

Junior Year

First Semester		Second Semester	
	S.H.		S.H.
Fine Arts or Music	3	Introduction to Sociology	3
General Psychology	3	Fine Arts or Music	3
English Electives	6	English Electives	6
Elective	3	Elective	3
	15		15

Senior Year

First Semester		Second Semester	
	S.H.		S.H.
Introduction to Philosophy	3	English Electives	12
English Electives	9	Elective	3
Elective	3		
	15		15

BACHELOR OF ARTS IN HISTORY

Freshman Year

First Semester		Second Semester	
	S.H.		S.H.
English Composition I	3	English Compositon II	3
History of Civilization	3	History of Civilization II	3
*Mathematics I	3	*Mathematics II	3
Principles of Geography	3	General Psychology	3
Foreign Language	3	Foreign Language	3
Introduction to Man and His Knowledge I	1	Introduction to Man and His Knowledge II	1
Physical Education I	0	Physical Education II	0
	<hr/>		<hr/>
	16		16

Sophomore Year

First Semester		Second Semester	
	S.H.		S.H.
**Literature I	3	Literature II	3
U.S. History I	3	U.S. History II	3
Biology I or Physical Science I or Chemistry I	3	Biology II or Physical Science II or General Chemistry II	3
Economics	3	Political Science	3
Speech	2	Foreign Language or Elective	3
Foreign Language or Elective	3	Physical Education IV	0
Physical Education III	0		<hr/>
	<hr/>		15
	17		

Junior Year

First Semester		Second Semester	
	S.H.		S.H.
**Literature I	3	**Literature II	3
Introduction to Philosophy	3	Survey of Art Forms I	3
Foreign Language or Elective	3	Foreign Language or Elective	3
Electives	6	Electives	6
	<hr/>		<hr/>
	15		15

Senior Year

First Semester		Second Semester	
	S.H.		S.H.
Introduction to Sociology	3	Art of Music I	3
Electives	12	Electives	12
	<hr/>		<hr/>
	15		15

*A student must complete 12 semester hours of two science sequences or 6 semester hours of mathematics and 6 semester hours of a science.

**See second footnote, p.19.

BACHELOR OF ARTS IN PHYSICS
Freshman Year

First Semester	Second Semester	S.H.	
English Composition I	3	English Composition II	3
General Physics I	3	General Physics II	4
Algebra and Trigonometry	3	Analytic Geometry	3
Modern Foreign Language	3	Modern Foreign Language	3
Introduction to Man and His Knowledge I	1	General Psychology	3
Physical Education I	0	Introduction to Man and His Knowledge II	1
Speech	2	Physical Education II	0
	15		17

Sophomore Year

First Semester	Second Semester	S.H.	
*Literature I	3	Literature II	3
General Chemistry I	3	General Chemistry II	3
Modern Physics	3	Calculus II	3
Calculus I	3	Modern Foreign Language	3
Modern Foreign Language	3	Optics	4
Physical Education III	0	Physical Education IV	0
	15		16

Junior Year

First Semester	Second Semester	S.H.	
History of Civilization I	3	History of Civilization II	3
Electronic Physics I	4	Electronic Physics II	4
Calculus III	3	Differential Equations	3
Survey of Art Forms I	3	Art of Music I	3
Physics Elective	3	Physics Elective	3
	16		16

Senior Year

First Semester	Second Semester	S.H.	
Introductory Sociology	3	United States History and Constitution	3
Elective	3	Geography	3
Introduction to Philosophy	3	Mathematical Physics II	3
Mathematical Physics I	3	Physics Elective	3
Elective	3	Elective	3
	15		15

*See second footnote, p. 19.

COURSE DESCRIPTIONS AND DEPARTMENTAL REQUIREMENTS

Note: Arabic numbers at end of course descriptions represent semester hours and clock hours in that order.

Example

Art 10 Survey of Art Forms I 3-3
The 3-3 represents 3 semester hours, 3 clock hours.

ART

Art 10 Survey of Art Forms I 3-3
 Significant art forms in Western Civilization from 1800 to the present.

Art 30 Survey of Art Forms II 3-3
 Significant art forms in Western Civilization from the earliest times to 1800.

Art 31 Basic Design 3-3
 The pictorial elements: line, color, shape and texture. The integration and usage of these basic elements as a preparation for the areas of drawing, painting and sculpture. Prerequisite: Art 10.

Art 32 Basic Drawing 3-3
 A studio course to acquaint the student with various modes of drawing, emphasis being primarily upon the exploration of line and mass. Prerequisite: Art 31 or permission of the instructor.

Art 33 Studio Problems in Painting and Drawing 3-6
 An introduction to the fundamental techniques in pictorial composition with emphasis upon the handling of painting media. Prerequisite: Art 32.

Art 34 Art of Asia 3-3
 A survey of the major art forms of Asian cultures. Emphasis on Chinese art, especially its calligraphy and painting.

Art 35 American Art 3-3
 Understanding of the growth and character of architecture, sculpture, painting and the minor arts from Colonial days to the present, with special emphasis upon contemporary art forms.

Art 36 Renaissance Painting 3-3
 Painting in Europe from 1250 to 1600. Emphasis on development of pictorial structure and technical innovations which set the standard of easel painting up to the first half of the 20th century.

Art 40 Advanced Studio Problems in Painting and Drawing 3-6
 A continuation of Art 33 with a deepening emphasis upon individual problems. (Students in the Art Teaching Specialty Program are advised to take this course after the training period.) Prerequisite: Art 30.

Art 80 Art in Elementary Education 2-4
 Observation and discussion of the philosophy and practice of art education, and a wide variety of creative experiences, for the elementary grades.

Art 81 Seminar in Art Education 2-2
 Limited to students in the Art Teaching Specialty Program. Designed to acquaint the student with professional practices in art education. Laboratory experiences, observations in the classroom, and discussions concerning professional literature. Prerequisite: Art 30.

Art 90 Independent Study in Art 3 hours credit
 For selected students, upon approval of both department head and advising instructor.

ELECTIVES

The elective courses, beginning with Art 34, are open to all students. Those specializing in art are expected to select at least one to complete their Art specialty.

ART MINOR PROGRAM

Students in the B.A. program will be admitted into this program at the discretion of the Art faculty and with the approval of their major professor.

Required Courses in Art Minor Program for Elementary Education Majors

- Art 30 Survey of Art Forms II
- Art 31 Basic Design
 Prerequisite: Art 10
- Art 32 Basic Drawing
 Prerequisite: Art 10, Art 31
- Art 33 Studio Problems in Painting and Drawing
 Prerequisite: Art 10, Art 31, Art 32
- Art 40 Advanced Problems in Painting and Drawing
 Prerequisite: Art 10, Art 31, Art 32, Art 33
- Art 81 Seminar in Art Education
 Prerequisite: Art 10, Art 31, Art 32, Art 33

ELECTIVES

- Students will select one. Prerequisite: Art 10, 30.
- Art 34 Art of Asia
- Art 35 American Art
- Art 36 Renaissance Painting

BIOLOGY

Bio. 10A and B	Biology I and II	3-4
	A general education course designed to provide an understanding of living things. Laboratory investigations supplement lectures.	
Bio. IIA and B	Anatomy and Physiology	3-4
	A study of the structure and physiological mechanisms of the human organism at the cellular, tissue, and organ level. Laboratory investigations supplement lectures.	
Bio. 12	Invertebrate Zoology	4-6
	Deals with the major phyla of invertebrates. Lectures are coordinated with laboratory studies, with emphasis on zoological principles and relationships. Prerequisite: Bio 10A and B.	
Bio. 13	Vertebrate Zoology	3-4
	The study of representative vertebrates. Emphasis is placed on ecological and economic factors, as well as life-histories. Laboratory investigations supplement lectures. Prerequisite: Bio. 10A and B.	
Bio. 30A	Botany of the Non-Vascular Plants	3-4
	The emphasis in this course is on representative Thallophytes and Bryophytes, their biology and importance to man. Laboratory work supplements the lectures. Prerequisite: Bio. 10 A, B.	
Bio. 30B	Botany of the Vascular Plants	3-4
	The emphasis in this course is on the Tracheophytes or Vascular Plants—from the Psilophyta through the Flowering Plants, their morphology, classification, economic importance and evolutionary development. Laboratory and field work supplement the lectures. Prerequisite: Bio. 10 A, B.	
Bio. 32	Biological Laboratory Techniques	3-4
	A study of microtechniques, including wholemounts, using both water soluble and hydrocarbon soluble media; smear, sectioning, stain-counterstain, squash, embryological microprojecting, physiological chemistry, and other molecular biological techniques. Prerequisite: Bio. 10A and B.	
Bio. 33	Conservation of Natural Resources	3-4
	The use and misuse of renewable resources and the maintenance of environmental quality and productivity will be considered in terms of past and present environmental influences. Prerequisite: Bio. 42.	
Bio. 34	Field Natural History	3-4
	Primarily a field course concerned with the native flora and fauna. Interpretive lectures supplement the field work.	

Bio. 35	Genetics	3-4
A study of the history of evolutionary thought, the mechanics of heredity, the action of environment and heredity on the organism, and the application of knowledge in the field to new and anticipated problems. Laboratory work supplements formal study. Prerequisite: Bio. 10B, Chem. 10B.		
Bio. 36	Plant Physiology	3-4
A study of the function of plant cells, tissues, and other structures. Prerequisite: Chem. 30A.		
Bio. 37	Anatomy and Physiology	4-6
A one-semester course that deals with the structure and function of the human organism.		
Bio. 38	Microbiology	3-4
Study of the structure and function of microorganisms with special emphasis on their relationships to man.		
Bio. 39	Comparative Chordate Anatomy	3-4
A comparative study of the structure and body systems of chordate. Laboratory work supplements lecture. Prerequisite: Bio. 10 A and B.		
Bio. 40	Marine Biology	3-3
A course designed to acquaint the student with the ecological aspects of the marine environment. A survey of the major animal and plant groups along with field trips to marine and estuarine areas. Prerequisite: Bio. 12.		
Bio. 42	Ecology	3-4
A study of phenomena such as population relationships, productivity, energetics, and community structure. Field trips accompany lectures. Prerequisite: Bio. 12, 13, 30 A and B.		
Bio. 43	Parasitology	3-4
The morphology of representative groups of parasitic protozoa, helminths, and arthropods, and their functional relationships to the animal and human hosts. Lecture supplemented by laboratory. Prerequisite: Bio. 12; upper-class status.		
Bio. 44	Cellular Structure and Function	3-4
An introduction to ultrastructure with a strong emphasis on cell physiology. Prerequisite: Chem. 32.		
Bio. 80	B.S.C.S. Biology	3-4
The B.S.C.S. (Biological Sciences Curriculum Study) approach to the teaching of biology. B.S.C.S. materials are used and evaluated. Seminars supplement supervised preparation of a laboratory and supervised contact with students in beginning laboratory. Prerequisite: Upper-class status.		
Bio. 90	Independent Research	2-3

CHEMISTRY

Chem. 10A	Chemistry I	3-4
Fundamentals of chemistry with special attention to products in physiological chemistry. Required in the Nursing curriculum.		
Chem. 10B	Chemistry II	3-4
The chemistry of carbon compounds at the pre-professional level with special attention to problems in physiological chemistry. Required in the Nursing curriculum. Prerequisite: Chem. 10 A.		
Chem. 11A	General Chemistry I	3-4
The fundamental laws and theories of chemistry such as atomic structure, the periodic table, electrochemistry, descriptive inorganic chemistry, the gas laws, solutions, descriptive organic chemistry and chemical binding. Chemical calculations are emphasized.		
Chem. 11B	General Chemistry II	3-4
Continuation of (and prerequisite:) Chem. 11A.		
Chem. 12A	General Chemistry I	3-4
Fundamentals of organic and inorganic chemistry. Emphasis on modern chemical processes and products. Required of Industrial Arts students.		
Chem. 12 B	General Chemistry II	3-4
Continuation of (and prerequisite:) Chem. 12A.		
Chem. 14	Qualitative Analysis	1-2
The separation and identification of inorganic cations and anions, with particular emphasis on the chemical principles involved: equilibrium, buffer solutions, complexions, solubility product, hydrolysis, and oxidation-reduction theory.		
Prerequisite: Chem. 11 A or the equivalent.		

Electives And Special Field Requirements

Candidates for Secondary teaching certificates in Chemistry must select courses from those listed below to complete 24 semester hours of credit in Chemistry. The Chemistry faculty in charge of counseling students may prescribe additional courses in the field.

Students of other curricula also may elect, under guidance, the following courses:

Chem. 30 A and 30 B Organic Chemistry I and II 4-5

The first half of the course deals with the correlation of structure and reactivity, interconversion of functional groups and structure determination. These topics serve as a basis for a discussion of the origin, uses and chemical technology of some biologically important compounds.

The second semester continues with an elaboration of the principles introduced earlier but with increased emphasis on reaction mechanisms.

Prerequisite: Successful completion of Chem. 11 A and 11 B or the equivalent.

Chem. 31 A and 31 B Organic Chemistry I and II

Same as Chem. 30 A and 30 B with the exception that an additional laboratory period is required. Required of all chemistry majors.

Chem. 32 Biochemistry 3-4

Introduction to the chemistry of carbohydrates, fats and proteins. Special topics on the metabolic processes of living things. Required of Biology majors in sophomore year. Prerequisite: Chem. 11 A and B or the equivalent.

Chem. 33 A Analytical Chemistry I 4-6

Emphasis on theory and application of Qualitative and Quantitative Analysis. The lectures stress chemical equilibrium, solubility product, complexometric formation, oxidation-reduction, and stoichiometric calculations. Laboratory experiments include qualitative separation and identification of metal ions; quantitative acid-base, redox, complexometric titration and selected gravimetric experiments.

Prerequisite: Chem. 11 A and B or the equivalent.

Chem. 33 B Analytical Chemistry II 3-5

Essentially a laboratory course in Instrumental Analysis including one hour lecture per week. Laboratory experiments include spectrophotometric, conductometric, potentiometric, and chromatographic analysis. Prerequisite: Chem. 33 A.

Chem. 34 Physical Chemistry 3-4

The underlying principles of chemistry from a physical chemistry standpoint. Kinetic theory, theories of the structure of matter, theory of electrolytic solutions, electrochemistry, thermodynamics, kinetics. Prerequisite: Chem. 33 A.

Chem. 35 Advanced Inorganic Chemistry 3-3

Valency theories, acid-base theories, reactions in non-aqueous solvents, complexation and chelation, physical measurements in inorganic chemistry. Prerequisite: Chem. 34 A and B.

Chem. 36 C.B.A. and CHEM STUDY Chemistry 3-3

The rationale underlying both the theoretical and laboratory presentation in the two presentations. Prerequisite: Chem. 34 and B.

Chem. 90 Independent Study in Chemistry 3-6

Laboratory research under guidance of the Chemistry staff. Prerequisite: Permission of the instructor.

EDUCATION

- Ed. 03 Handwriting Once a month, no credit
 Standard handwriting course required of students in the Elementary and Special Education curricula.
- Ed. 70 Trends in American Education 3-3
 An historical study with emphasis on current practices and trends at both Elementary and Secondary levels. Western and American concepts and influences, issues, leaders and movements in current educational literature. Required of Secondary Education majors.
- Ed. 76 Instructional Media Techniques 3-3
 A basic study of the effective selection, use and evaluation of various types of instructional media for all classroom areas.
- Ed. 80 Principles and Practices in Education 3-5
 Required of all Education majors. Definitions of educational goals and systematic training in the achieving of these goals. Observation on appropriate levels supplements classroom activities.
- Ed. 81 Reading in the Elementary School 3-3
 Problems and methods of teaching reading in the primary and elementary grades. Procedures for each stage of the pupil's development. Many basic reading series are studied.
- Ed. 83 Reading Improvement 3-3
 A practical program based upon research findings and sound instructional procedures. Each student is assigned an individual child who has a reading problem.
- Ed. 84 Social Studies in the Elementary School 2-2
 Man and his relationship with other men and with his environment. Use and interpretation of graphs, charts and cartoons; use of globes and maps; teaching for world understanding.

ELEMENTARY

- Ed. 85 Student Teaching in Elementary Education 12-25
 Each student is required to have a full semester of student teaching consisting of two experiences at the elementary education level in selected schools. Under the guidance of experienced co-operating teachers and college supervisors each student assumes responsibility for teaching and managing the educational program. Provision is made for conferences throughout the semester.
- Ed. 86 Student Teaching in the Secondary School 9-18
 Students are assigned to a laboratory school for a semester of student teaching in their specialized field. Under trained supervision responsibility is gradually assumed for planning and executing the educational program.

Ed. 87 Reading in the Secondary School 3-3
 Curriculum development, materials and nature of reading. Emphasizes method of appraisal through teacher observation and diagnosis. Required of Secondary curriculum English majors.

Ed. 88 Special Methods in Major Areas 3-3
 These courses emphasize curriculum development, materials and any methods that are peculiar to the specific subject matter major. In some instances more specific information will be found under departmental descriptions such as English 88, Mathematics 88, Science 88, etc.

Ed. 89 Language Arts in Elementary School 3-3
 The four aspects of a total program in Language Arts: listening, speaking, writing and creativity. Stresses building of desirable standards of speaking and writing suitable to the child's level of development.

ENGLISH

Eng. 10 A English Composition I 3-3
 Practice, both oral and written, expressing ideas with precision, clarity and economy. Critical reading.

Eng. 10 B English Composition II 3-3
 Essentially a continuation of Eng. 10 A but more advanced. Logic, vocabulary of criticism, the research essay. Prerequisite: a passing grade in English Composition I.

Eng. 20 A American Literature I 3-3
 Representative American writers from Colonial days through the Civil War.

Eng. 20 B American Literature II 3-3
 Representative American writers since the Civil War.

Eng. 21 A English Literature I 3-3
 British writers from the Old English period through the early Romantic writers of the late 18th century.

Eng. 21 B English Literature II 3-3
 British writers since the Romantic Movement.

Eng. 22 A World Literature I 3-3
 European literary masterpieces from the beginning through the middle of the 17th century.

Eng. 22 B World Literature II 3-3
 European literary masterpieces from the mid-17th century to the present.

Eng. 30 World Drama 3-3
 Significant and representative plays from the beginning to the modern period.

Eng. 31	Modern Drama	3-3
	The works of such playwrights as Ibsen, Chekhov, Sartre, Williams, Brecht, Ionesco.	
Eng. 32	The Middle Ages	3-3
	Literary forms that made their first appearance after the emergence of Middle English. Much attention to Chaucer.	
Eng. 33	The Early Shakespeare	3-3
	Tragedies, comedies and English chronicle histories of Shakespeare's youth.	
Eng. 34	The Later Shakespeare	3-3
	Mature comedies and tragedies. This course complements the Early Shakespeare but either may be taken independently of the other.	
Eng. 35	Elizabethan Literature	3-3
	The main characteristics of Renaissance and Elizabethan literature.	
Eng. 36	The Seventeenth Century	3-3
	Non-dramatic English literature from Bacon through Dryden.	
Eng. 37	Milton	3-3
	The English poems including <i>Paradise Lost</i> , and some prose.	
Eng. 38	The Eighteenth Century	3-3
	From the development of Neo-classicism to the early stirrings of Romanticism. Dryden to Burns.	
Eng. 39	Literature of the Romantic Period	3-3
	Wordsworth, Coleridge, Byron, Shelley, Keats. Minor authors such as Lamb and Hazlitt.	
Eng. 40	Literature of the Victorian Period	3-3
	Prose, poetry and drama are studied for a greater understanding of the aesthetic, spiritual and social development of this period.	
Eng. 41	The Novel Before World War I	3-3
	Significant novels representing various countries and periods as well as stages in the development of this literary form.	
Eng. 42	The Modern Novel	3-3
	Modern novels of different nations are studied both aesthetically and as human documents.	
Eng. 43	The Short Story	3-3
	The episode, tale and novella are studied both as art forms and as mediums for the portrayal of personal relationships in various countries and periods.	
Eng. 44	Modern Poetry	3-3
	Representative modern poetry with the emphasis on American and English poets.	

Eng. 45 Major American Writers of the Twentieth Century 3-3

The present domination of the United States in world affairs as reflected in the varied creativity of American writers of fiction, drama, poetry, criticism, and the essay since World War I.

Eng. 46 British and American Humor 3-3

Dwelling primarily on comic writing in the fields of nonsense, fantasy, allegory and satire, this course aims to explore the well-springs of British and American humor as a reflection of national character.

Eng. 47 Twentieth-Century Irish Literature 3-3

Synge, Yeats, Joyce, O'Flaherty, O'Connor and O'Faolain, with some attention to minor figures of the so-called Irish Literary Renaissance and of recent decades.

Eng. 48 Children's Literature 3-3

Criteria for evaluation; story-telling; sources; book clubs; book fairs; school and classroom libraries; related areas.

Eng. 49 Books and Related Materials for Young People 3-3

The outstanding literature, with guides to its selection and use.

Eng. 50 History of Literary Criticism 3-3

Critical theory and practice from Aristotle through the 19th century.

Eng. 51 Modern and Contemporary Criticism 3-3

Varied theories and practice. Complements History of Literary Criticism but either may be taken independently of the other.

Eng. 52 Historical Development of the English Language 3-3

The nature and development of the English language, its structure, etymology, morphology, multilingual vocabulary and relation to other languages, is studied for an understanding of the political, social and cultural influences upon our native tongue.

Eng. 53 Advanced Composition 3-3

Conducted as a writer workshop. Stresses written assignments in non-fictional prose.

Eng. 54 Creative Writing 3-3

For those students who, having completed Freshman Composition I and II with distinction, wish practice and guidance in one or two creative literary genres to which they feel temperamentally inclined. Upon approval of instructor.

Eng. 88 A The Teaching of English I 2-4

The methodology of English (lesson planning, selection of materials, curriculum development, review of relevant research). Microteaching and observation of secondary school English classes.

Eng. 88 B The Teaching of English II 1-2

Continuation of (and prerequisite:) Eng. 88 A.

Eng. 90 Independent Study 3-3

For English majors excelling in scholarship, upon approval of both department head and advising instructor.

Electives and Special Field Requirements

Students following the Liberal Arts Curriculum with a major in English are required to take a total of 27 S.H. of elective courses to make a total of 45 S.H. of English.

Students preparing to teach English are required to take a minimum of 24 elective hours to make a total of 42 S.H. of English.

The sophomore literature requirement for all curricula may be fulfilled by taking either the one-year course in American Literature I and II, or the one-year course in English Literature I and II, or the one-year course in World Literature I and II. Before deciding which of the three to take, the student should ascertain whether it meets the requirements of his chosen curriculum. English majors are required to take both the one-year course in English Literature I and II and World Literature I and II. No student may take any of the sophomore literature courses unless he has successfully passed English Composition I and II.

FOREIGN LANGUAGES

A minimum of 6 semester hours of a foreign language is required for credit toward a degree for non-Liberal Arts students who wish to take foreign languages as electives. All foreign language courses must be taken on a two-semester basis or its equivalent to obtain the full 6 credit hours. To satisfy the language requirements for the Bachelor of Arts degree, students must complete one level higher than the intermediate, either in the civilization or literature areas. A placement test, given in the spring prior to the beginning of the semester, must be taken by students to determine their level of proficiency in a specific language beyond the elementary level. (Students in the Elementary curriculum wishing to specialize in French must reach the minimum proficiency level of French 22 or 33 and take French 80.) Those wishing to specialize in Spanish must reach the minimum proficiency level of Spanish 22 or 33 and take Spanish 80.

FRENCH

Fr. 10 A French for Beginners 3-4

Aural-oral approach to correct pronunciation, reading ability, and fundamentals of grammar and syntax. French gradually becomes the working classroom and the laboratory language.

Fr. 11 A French I Intermediate 3-4
Remedial pronunciation, grammar variety, conversation and laboratory practice; and readings stressing life, customs, and culture of France. Prerequisite: Two years of high school French or French 10 A and B and/or satisfactory score on Placement Test.

Fr. 11 B French II Intermediate A continuation of French 11 A.	3-4
Fr. 22 A French Civilization I The development of the French nation as revealed in its history, geography and basic institutions through modern literature. Prerequisites: Placement Test or completion of French 11A and B and/or instructor's permission. (Course conducted in French.)	3-3
Fr. 22 B French Civilization II A continuation of French 22 A.	3-3
Fr. 33 A French Literature I A survey of the main currents of French literature from the Middle Ages through the 18th century. Prerequisite: Placement Test or completion of French 11 A and B and/or instuctor's permission. (Course conducted in French.)	3-3
Fr. 33 B French Literature II A survey of the main currents of French literature of the 19th and 20th centuries. Prerequisite: Placement Test or completion of French II A and B and/or instructor's permission. (Course conducted in French.)	3-3
Fr. 80 Methods for Teaching French in the Elementary School Designed to develop phonetic accuracy, aural comprehension and fluency in practical use of the language; techniques and materials for use in elementary school. Prerequisite: Minimum of 12 semester hours beyond beginners' level, and permission of instructor.	3-3
Fr. 90 Advanced French Independent Study Independent study within a designated area on an advanced basis. Prerequisite: Minimum of 12 semester hours, 2 grade average (in French) and permission of instructor.	3-3

LATIN

Lt. 11 A Latin I Intermediate Intensive review of grammar, syntax and forms. Selected readings in Latin prose and verse. Prerequisite: At least two years of high school Latin and/or satisfactory score on Placement Test.	3-3
Lt. 11 B Latin II Intermediate A continuation of Latin 11 A.	3-3

SPANISH

Spa. 10 A Spanish for Beginners Aural-oral approach to correct pronunciation, reading ability, and fundamentals of grammar and syntax. Spanish gradually becomes the working classroom and laboratory language.	3-4
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Spa. 10 B Spanish for Beginners A continuation of Spanish 10 A.		3-4
Spa. 11 A Spanish I Intermediate Remedial pronunciation, grammar variety, conversation and laboratory practice; and readings stressing life, customs, and culture of Spain and Spanish America. Prerequisite: Two years of high school Spanish (or Spanish 10 A and B) and/or satisfactory score on Placement Test.		3-4
Spa. 11 B Spanish II Intermediate A continuation of Spanish 11 A.		3-4
Spa. 22 A Spanish Civilization I Conducted in Spanish. Spanish culture as evidenced in Spain and Spanish America through modern representative literature. Prerequisite: Placement Test or completion of Spanish 11 A and B and/or instructor's permission.		3-3
Spa. 22 B Spanish Civilization II A continuation of Spanish 22 A.		3-3
Spa. 33 A Spanish Literature I Conducted in Spanish. A survey of Spanish American Literature. Prerequisite: Placement Test or completion of Spanish 11 A and B and/or instructor's permission.		3-3
Spa. 33 B Spanish Literature II A continuation of Spanish 33 A.		3-3
Spa. 80 Methods for Teaching Spanish in the Elementary School Designed to develop phonetic accuracy, aural comprehension and fluency in practical use of the language; techniques and materials for use in elementary school. Prerequisite: Minimum of 12 semester hours beyond beginners' course and permission of the instructor.		3-3

GEOGRAPHY

Geog. 10 Introduction to Geography The interrelationships between the physical and cultural elements of man's environment.	3-3
Geog. 20 Geography of the United States and Canada Organized on the regional basis. Emphasizes the influence of topography, climate, soils, vegetation, transportation and natural resources on the occupations and cultural development of each region.	3-3

ELECTIVES

Geog. 30 Economic Geography The basic geographic factors that are involved in the production, distribution and consumption of the major commodities of the world.	3-3
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Geog. 31 Meteorology	3-3
The laws and principles underlying atmospheric phenomena, weather analysis and forecasting, and the application of weather data to problems of agriculture, forestry, transportation and health.	
Geog. 32 Climatology	3-3
A systematic study of the climate regions of the earth and the interplay of latitude, pressure cells, mountain barriers, water bodies, ocean currents, and winds on the development of each climate type.	
Geog. 33 Geography of Latin America	3-3
The geography of the countries and colonies of Latin America; historical background and political status, physical and climatic regions, agricultural and economic position, and inter-American and international relations.	
Geog. 34 Geography of Europe	3-3
This regional analysis is based on the geographic elements that have influenced the evolution of the countries of Europe and have produced the national and international problems faced by European countries today.	
Geog. 35 Geographic Influences in American History	3-3
Oceans and coasts, islands and harbors, mountain barriers and gaps, weather and climate, soil and vegetation, native animals and natural resources are analyzed to show their influence on the exploration, colonization, and expansion of the United States.	
Geog. 36 Political Geography	3-3
Dependent and independent political units (colonies, protectorates, trust territories, commonwealths, and countries), boundary disputes, strategic areas, buffer zones, and international organizations.	
Geog. 37 Geography of Asia	3-3
A regional analysis based on the geographic factors that have played a part in the development of the internal and external problems facing the nations of Asia today.	
Geog. 38 Geography of Africa	3-3
The economic, political, historical, and cultural development of the countries of Africa in relation to their physical environment.	
Geog. 39 Geomorphology	3-3
Land forms (mountains, plateaus, valleys, lakes, canyons, beaches, caves) and their development through the action of physical agents: glaciers, surface water, underground water, wind vulcanism, diastrophism, and waves.	
Geog. 40 Geography of Oceania	3-3
Australia, New Zealand, Indonesia, the Philippines, and the island groups of the Pacific, including Micronesia and Polynesia.	

Geog. 41 Cartography 3-3
Elementary drafting techniques necessary in presenting data on maps, charts and block diagrams. Problems and methods of research, compilation, scale and the construction of the common types of map projections.

Geog. 88 Special Methods in Teaching Geography (See under Education.)

Geog. 90 Independent Study in Geography 3-3
Provides students of exceptional ability and high academic achievement who are specializing in Geography the opportunity to investigate and analyze, with faculty guidance, a subject or problem of geographic significance.

Electives and Special Field Requirements

A major in Geography can be obtained after the Introduction to Geography course has been satisfactorily completed by 9 three-hour courses from the list of electives on p. 49.

Students majoring in Elementary Education with a specialization in Geography are required to complete at least 18 semester hours of Geography and take Ed. 84 Social Studies in the Elementary School. They are encouraged to also take History electives and thereby earn a Social Studies specialization.

HISTORY

(Also see Social Studies)

Hist. 10 A and 10 B	History of Civilization I and II	3-3
	Emphasizes the special characteristics and contributions of periods and peoples from primitive man until today.	
Hist. 20	United States History and Constitution	3-3
	The major forces and movements most important in the development of the American heritage from the Revolutionary War to the present. Special attention is given to the United States Constitution and its role in American history.	
Hist. 21 A	United States History I	3-3
	The Colonial scene. The background and causes of the Revolutionary War, the Articles of Confederation, continues through the 19th century to the Progressive Era, World War I, the decade of reaction, the Great Depression, the New Deal, World War II, ending with the Kennedy years.	

Hist. 21 B United States History II 3-3
Begins with the post Civil War Reconstruction, continues through the 19th century to the Progressive Era, World War I, the decade of reaction, the Great Depression, the New Deal, World War II, ending with the Kennedy years.

ELECTIVES

Hist. 30 The American Civil War and Reconstruction Period 3-3

From 1850 to 1865, especially the nation and its sections in the 1850's, politics and slavery, Lincoln's rise to power, the political, military, diplomatic aspects of the war, reconstruction.

Hist. 31 The Westward Movement 3-3

The movement as a social process, and the impact of the West on American development.

Hist. 32 The Economic History of the United States 3-3

The economic development of the United States from the colonial period to the present. Emphasis on the agricultural, financial, commercial, industrial-regulatory and labor developments and movements.

Hist. 33 American Diplomatic History 3-3

A survey of the roots of American diplomacy before 1900, with major emphasis on the 20th-century problems.

Hist. 34 American Intellectual History 3-3

The history of ideas in America from the 17th Century to the present.

Hist. 35 History of Mexico, Central America and the Caribbean 3-3

Hist. 36 History of Eastern South America (Brazil, Argentina, Uruguay, Paraguay.) 3-3

Hist. 37 History of Western South America (the Andean countries.) 3-3

Each surveys the pre-Columbian and colonial backgrounds, the clash and fusion of differing cultures, and the evolution of today's unique Latin American civilizations. The arts and the writings of social scientists as well as more conventional historical materials are drawn upon to contribute toward an understanding of today's problems.

Hist. 38 American Colonial History 3-3

Exploration, settlement patterns, imperial system, social structure, rise of representative government in America, and the 18th Century wars for empire.

Hist. 39 Era of the American Revolution 3-3

Coming of the Revolution, war tactics and strategy, the first American Constitution, Confederation problems, and the formation of the Eastern Emperors.

Hist. 40 Greek and Roman History 3-3

General summary of Greek and Roman civilizations from the arrival of the Hellenes until the end of the Western Empire. The age of the Eastern Emperors.

Hist. 41	The Ancient Near East	3-3
	Intensive study of Egyptian, Mesopotamian, Hebrew, Cretan, and Persian civilizations.	
Hist. 42	Byzantine History	3-3
	The development of the concept of a "Second Rome" at the Constantinople of Constantine; the religious controversies at the time of Julian the Apostate; the East-West Schism; the effects on Slavic and Russian converts; the establishments of Moscow as the "Third Rome," the Russian Pan-Slavic Messianism to the present.	
Hist. 43	History of the Middle Ages	3-3
	The political-cultural history of the Mediterranean and European world from the fall of the Roman Empire to the Renaissance.	
Hist. 44	History of the Renaissance and Reformation	3-3
	The causes and nature of the Renaissance and Reformation and their relationship.	
Hist. 45	European History to 1815	3-3
	From 1500 to 1815, with special emphasis upon the political, social, and economic progress of the major European nations.	
Hist. 46	European History from 1815 to the Present	3-3
	Liberalism and nationalism, the Industrial Revolution, unification of Germany and Italy, World War I, the Russian Revolution, the search for security, World War II and post-war quest for peace.	
Hist. 47	Russian History to 1917	3-3
	The Slavs and the founding of the Kievan State; the Mongol, Muscovite and the Empire periods to the 1917 Bolshevik Revolution, Social, political and other institutions in pre-Soviet Russia are stressed.	
Hist. 48	Russian History - 1917 to the Present	3-3
	The Bolshevik seizure of power in 1917 and the attempts to put Marxist theory into practice in Russia. The contributions of Communist leaders. The institutional development of education, religion, the family, the arts.	
Hist. 49	The Modern Near East	3-3
	A diplomatic history of the Near East from the ascendancy of the Ottoman Turks to the establishment of mandatory regimes following World War I.	
Hist. 50	British History 55 B.C. - 1603 A.D.	3-3
	The Picts, Celts, Angles, Saxons, Danes and Norman French as components of British stock. Pre-Roman, Anglo-Saxon, Norman, Angevin and Tudor periods.	

Hist. 51	British History - 1603 to the Present	3-3
Stuarts, Cromwell, Restoration; colonial period; revolutions in industry, transportation and agriculture; Napoleonic Era; Victorian Age; world empire; and World Wars I and II; Britain in the post-war world. The literary and artistic expression and dominant thought of the several eras.		
Hist. 52	History of Imperialism	3-3
A survey of the relations between Europe and the non-European world from the age of discovery through the periods of expansion, Western dominance and nationalist uprisings against colonialism.		
Hist. 53	Early Intellectual History	3-3
The development of historical investigation and the problem of historical method as exemplified in ancient and medieval texts and writers. Lectures, readings, reports.		
Hist. 54	Modern Intellectual History	3-3
Critical appraisal of the major contemporary historical traditions.		
Hist. 55	Modern Economic History	3-3
Economic development in the Western world from the Industrial Revolution to the present.		
Hist. 56	Current World Affairs	3-3
The background, action, and consequences of two World Wars. An understanding of present world problems and international relations through an analysis of contemporary forces and issues.		
Hist. 57	Federalist Era 1789 - 1828	3-3
A study of early American nationalism as represented in domestic and foreign affairs. Stress on the first American party system, economic nationalism, and foreign policy declarations.		
Hist. 88	Special Methods in Teaching of History	3-3
Special techniques for the teaching of history, and their relationship to the principles of general methods.		
Hist. 90	Independent Study in History	3-3
Open to students specializing in History. Each student researches and writes a scholarly report under tutorial guidance.		
ELECTIVES AND SPECIAL FIELDS REQUIREMENTS		
<p>Candidates for the degree of Bachelor of Arts with a major in History or Bachelor of Science in Education with a major in History are required to complete a minimum of 24 and 21 hours respectively in guided elective courses in or pertaining to their major fields. All electives must be approved by the History faculty. Students majoring in Elementary Education with a specialization in History are required to complete at least 18 semester hours of History and take Ed. 84 Social Studies in the Elementary School. They are also encouraged to take Geography electives to earn a Social Studies specialization. Students in other curricula may also select courses from the electives lists.</p>		

INDUSTRIAL ARTS

- I.A. 10 General Shop I 2-4
 Methods and procedures of conducting teaching units in a multiple-activity shop. Students sample at their level, units normally carried on in teacher-training assignments.
- I.A. 11 Introduction to Woodworking 2-4
 Emphasizes the individual project method in benchwork and a limited amount of machine work. Tools, materials, processes, design. The making of household and recreation accessories.
- I.A. 12 Introduction to Metals 2-4
 Chemical metallurgy of selected metals, the use of precision measuring tools, sheetmetal fabrication, foundry practices, bench processes.
- I.A. 13 Introduction to Typography 2-4
 The graphic arts industry and methods of visual communication. Comparison of the "big three" printing methods, materials and hardware; screen printing, photography and office reprography. Design, type speaks, terminology, point system, papermaking, inks, presses, proof marking and movable type.
- I.A. 14 D.C. - Circuit Fundamentals 2-4
 Direct current electricity and magnetism plus applications of these principles to circuits and devices. Verification of these principles is made by means of experiments, demonstrations, and wiring problems.
- I.A. 15 History of Power Mechanics 2-4
 Man's endeavor to harness the forces of nature to meet his ever-increasing demand for power. Students construct a model which is representative of man's accomplishments in prime movers.
- I.A. 16 Introduction to Design 2-4
 Lettering, dimensioning, orthographic projection, symbols, sectioning, isometric and auxiliary views are studied and developed. Problem development and blueprint reading.
- I.A. 17 Introduction to Design 2-4
 Through a series of compositional assignments students are introduced to two-dimensional and finally three-dimensional form. Black and white line and form, perspective modeling, color theory, light and space are combined in a study of contemporary design.
- I.A. 20 General Shop II 3-6
 Laboratory experiences with common theories and practices of the general shop; emphasis on organization including personnel systems, individualized activities, preparations of instructional materials, analysis of criteria for project selection, and application of the unit method to student-teaching assignments.

I.A. 21 Furniture Making

3-6

Furniture woods, design, construction, and finishing. Hand-tool skill is furthered, along with machine techniques. Individual pieces of small furniture are designed, constructed and finished.

I.A. 22 Machine Shop Processes

3-6

Metalworking machine tools and processes, as well as arc welding. Design and fabrication of products which involve skill in machining and welding.

I.A. 23 Graphic Arts Unit Teaching

3-6

Problem-centered group activity leading to development of a graphic arts unit. Investigation of materials, processes, hardware, occupations, historical development, and relationship of unit to industry. Emphasis on hand processes, creative hobbies, photography, printmaking and collecting, and supporting visual aids.

I.A. 24 A.C. - Circuit Fundamentals

3-6

Further application of DC circuit principles covered in DC Circuit Fundamentals together with the study of AC circuit fundamentals, electromagnetism and electromagnetic induction. Experiments and tests performed with motors, generators, transformers, controls, and various types of drives.

I.A. 25 Internal Combustion Engines

3-6

Internal combustion engines from 1900 to the present, and the impact this power plant has had on our society. Emphasis on the breakdown, study, reassembling, testing, and adjusting of single-cylinder to eight-cylinder engines.

I.A. 26 Engineering Drawing

3-6

Continuation of fundamentals in the field of intersection and developments, revolutions, axonometrics, assembly, and detail drawing. Chalkboard techniques.

I.A. 30 Structures

3-6

Basic principles and assumptions of structural design, including drawing and models. An analysis is made of ordinary structural members, frames and trusses. Load tests determining reactions, shears, bending moments, stresses.

I.A. 31 Production Furniture

3-6

Production of high-grade furniture, employing jigs, fixtures, and suitable mass-production procedures. Appropriate methods of production management are used and studied.

I.A. 32 Advanced Machine Shop Processes

3-6

Emphasizes increasing skill in selected areas of metalworking and broadening knowledge of machine operation. Oxy-acetylene welding of ferrous metals. Practical work of an approved type.

I.A. 33	Offset - Lithography	3-6
Publishing experience solving lithographic problems of design, pasteups, camera, stripping, platemaking, and operation of Davidson press. Planning dummy, choice of stock, composition, repros, scheduling, binding. Principles of halftones, color theory, photo-sensitive films and plates; chemistry of inks, papermaking and lithoprinting.		
I.A. 34	Radio Theory and Practice	3-6
Basic electronic principles and their applications in electronic devices. Theory is supplemented by the construction and testing of various circuits which illustrate applications of basic principles.		
I.A. 35	An Introduction to Flight	3-6
A survey course concerning the history of flight, how an airplane flies, aircraft controls, problems in aerodynamics, super-sonic flight, rocket-propulsion and course development for high school level.		
I.A. 36	Descriptive Geometry	3-6
In this phase of drawing, problems both abstract and practical are worked out graphically. Visualization problems dealing with the concept of locus.		
I.A. 37	Advanced Design	3-6
Students develop individual design projects and follow through to a completed design module. Primary consideration is given to the creative approach to contemporary design. Field trips to designers at local plants are arranged. Prerequisite: I.A. 17 or equivalent course.		
I.A. 40	Research in Industrial Materials	3-4
Standard tests and procedures and laboratory tests to determine the properties of materials under investigation. Reports of research studies and laboratory experimentation.		
I.A. 41	Woodworking Technology	3-6
For students who have proved their ability and wish to specialize in Woodworking. Tool and machine shop maintenance, designing and making teaching aids, and experimentation in wood technology and project development.		
I.A. 42	Elements of Metallurgy	3-6
The physical metallurgy of common metals. Crystallization, theories of slip, heat treatments, corrosion, and specimen preparation for microscopic inspection. The interpretation and use of the iron-carbon equilibrium diagram is required. Prerequisite: I.A. 12, 22, or equivalent, and consent of instructor.		
I.A. 43	Problems of Service Printing	3-6
Supporting role of the graphic arts: to job shops, in-plant reprography, packaging, advertising, high-school service printing. Illustrating art, techniques of color separation and printing; audio-visual presentation; application of electrostatic printing to computers, long-distance facsimile; office copiers.		

- I.A. 44 Transistors, FM, Test Equipment 3-6
Further applications of electronic principles introduced in Electronics II as they apply to power supplies, test equipment, photoelectric and other devices, plus an introduction to transistor theory and practice and FM receivers.
- I.A. 45 Power Mechanics Projects Development 3-6
A laboratory course for the student who has expressed the desire to research, design, finance and construct a project that has been previously discussed with his professor.
- I.A. 47 Ceramics 3-6
Various methods of clay formation are studied including throwing on the wheel. Ceramic decoration as related to glazing techniques. A strong emphasis on three-dimensional sculptural form.
- I.A. 70 Foundations of Industrial Arts I 2-2
Educational theories, social and academic setting, and leaders of each period of Industrial Arts history from manual training to the present, with emphasis on the major contemporary viewpoints of Industrial Arts.
- I.A. 71 Foundations of Industrial Arts II 3-4
An overview of the social and philosophical foundations of American public education with emphasis on curriculum theories and their application to the structure and organization of Industrial Arts in general education.
- I.A. 80 Principles and Practices in Industrial Arts 3-3
Principles underlying methods of planning and guiding learning activities with a special emphasis on problem solving, the project method and unitary teaching, plus the effective application of these methods to Industrial Arts teaching.
- I.A. 85 Student Teaching in Industrial Arts 9-18
Each student is directly responsible for planning, teaching and managing a given number of classes either in the campus junior high school or selected public school shops under the supervision of an experienced teacher.
- I.A. 88 Industrial Arts for Special Education 3-6
Rudiments of planning, drawing, construction, and use of a variety of visual materials. A laboratory approach is made through projects to attain background in tools, materials, and processes appropriate to this type of teaching.
- I.A. 89 Instructional Material in Elementary Education 2-4
Rudiments of planning, drawing, and construction of a variety of visual aids appropriate to the elementary grades. Emphasizes selected techniques of fabricating materials common to unit activities in the elementary school.
- I.A. 90-97 Independent Study in Various Shops 3 hours credit

LIBRARY SCIENCE

Students in the Elementary curriculum wishing to qualify for certification as school librarians must take the following courses plus English 39 or English 40 for a total of 18 semester hours of work. In addition they will serve an internship in the college and training school libraries.

L.S. 81 A and B Reference Materials and Their Use 6-6

Selection and use of basic works such as encyclopedias, dictionaries, periodical indexes, biographical dictionaries, atlases, yearbooks, directories, handbooks and general bibliographies.

L.S. 82 A and B Reference Materials and Their Use 6-6

Accepted procedures for classification and cataloguing of school library materials, both book and non-book recordings, films, film-strips, slides, maps, pictures and pamphlets.

MATHEMATICS

Candidates for Secondary teaching certificates in Mathematics must complete a minimum of 33 semester hours of credit in the field, the equivalent of Math. 11, 12 through Math. 38 and 44.

Students in the Elementary curriculum who wish to specialize in Mathematics can do so by electing five courses beyond required Math. 10 A and B under the guidance of the Mathematics Department. Other interested students may choose electives from this area with departmental approval.

Math. 10 A Mathematics I 3-3

The real number system, algebra, trigonometry, analytic geometry and calculus.

Math. 10 B Mathematics II 3-3

Continuation of (and prerequisite:) Math. 10 A.

Math. 11 Algebra and Trigonometry 3-3

The topics in algebra include mathematical induction, the binomial theorem, combinations, permutations, and a study of the real and complex number systems. The work in Trigonometry emphasizes the analytic and functional relations in trigonometry and concludes with the solving of triangles.

Math. 12 Analytic Geometry 3-3

Rectangular coordinates, functions, and graphs on the plane and in space. Polar coordinates and complex numbers. Conics and quadrics. Introduction to vectors, vector spaces and transformation of coordinates, matrices and determinates. Prerequisite: Math. II.

Math. 13 Introduction to Computer Programming 3-3

For students with no prior computer experience. Introduction to a basic computer language, the technique of constructing flow charts, writing programs from problems in mathematics and related areas. Problems from engineering, economics, accounting, biology, sociology, etc. may be approached by students with such interests.

Math. 14	Informal Geometry	3-3
Fundamental ideas of congruence, measurement, parallelism, similarity, mathematical models for space, non-metric geometry, incidence geometry, convexity, distance and the ruler postulate.		
Math. 31	Calculus I	
Differentiation of algebraic, trigonometric, and exponential functions. Differentials. An introduction to integration. Prerequisite: Math. 12 or the equivalent.		
Math. 32	Calculus II	3-3
The definite integral and techniques of integration and applications to areas and volumes of surfaces of revolution. Prerequisite: Math. 31 or the equivalent.		
Math. 33	Calculus III	3-3
The concept of a curve and of a function of several variables Differentiable curves and functions of several variables are defined and their properties are applied to geometry and physics. Multiple integration. Prerequisite: Math. 32 or the equivalent.		
Math. 34	Geometry I	3-3
Elementary geometry of space and the plane is studied in a modern setting. Emphasis is given to the foundations and the structure of the theory. The concept of incidence, betweenness, measure, congruence, parallelism. Prerequisite: Math. 12.		
Math. 35	Probability and Statistics I	3-3
Counting methods, probability theory, discrete and continuous random variables, sampling methods. Prerequisite: Math. 11 or 10A and B.		
Math. 36	Geometry II	3-3
A continuation of Math. 34. Axiomatic projective geometry and its relationship to other geometries through a study of transformations. Prerequisite: Math. 34.		
Math. 37	Elementary Differential Equations	3-3
Ordinary differential equations of the first order and degree including linear equations. Linear equations of the second order. Prerequisite: Math. 33 or the equivalent.		
Math. 38	Introduction to Abstract Algebra I	3-3
Mappings, equivalence relations, congruences, number systems, groups, rings, integral domains, fields, polynomials. Prerequisite: Math. 11 or Math. 10 A and B.		
Math. 39	Probability and Statistics II	3-3
A continuation of Math. 35. One and many dimensional random variables, the normal, binomial, Poisson, hypergeometric functions, estimation, hypothesis testing, introduction to analysis of variance. Prerequisite: Math. 31, and 35 or their equivalent.		

Math. 43	Introduction to Mathematical Logic	3-3
	A course in postulational foundations and the processes of logical reasoning. (Not offered every year.) Prerequisite: Math. 11 or Math. 10 A.	
Math. 44	Linear Algebra	3-3
	The theory of finite dimensional vector spaces is developed and applied in the study of linear transformations, determinants and matrices. Prerequisite: Math 11 and Math. 12.	
Math. 45	Topology	3-3
	Surfaces, set theory, axioms for topological spaces, continuous maps, homeomorphisms, convergence, closure, topology of real numbers and Euclidean spaces, homotopy. Prerequisite: Math. 33 or permission of the instructor.	
Math. 46	Number Theory	3-3
	An introduction to the study of integers and their properties. Divisibility, properties of integers, the greatest common divisor, the lowest common multiple, prime numbers, the unique factorization theorem, theorems of Fermat. Prerequisite: Math. 12 or permission of the instructor.	
Math. 88 A	The Secondary School Mathematics Curriculum	3-3
	The objectives and content of a modern mathematics sequence for grades 7-12 are studied by examining materials developed by S.M.S.G. (School Mathematics Study Group). Representative materials developed by other groups will be compared with SMSG program, and the role of axiomatics in mathematics will be developed.	
Math. 88 B	Mathematical Concepts	3-3
	Selected topics from the arithmetic, algebra, and geometry of modern elementary school mathematics programs, including the School Mathematics Study Group Program, the Madison Project, and the Stanford Project with attention to the discovery approach.	

MEDICAL TECHNOLOGY

Courses at affiliated hospitals:

M.T. 80	Hematology, Serology and Blood Bank	8-19
	Theory and practice of enumeration of blood cells, and evaluation of stained blood smears; precipitation, agglutination, and complement fixation tests; determination of human blood groups; procurement and preservation of human blood for transfusion.	
M.T. 81	Bacteriology and Parasitology	8-13
	The pathogenic bacteria and fungi, with emphasis on methods of identification.	

M.T. 82	Histology and Cytology	4-7
Individual instruction in the preparation and staining of tissues and body fluids for microscopic study.		
M.T. 83	Biochemistry	8-13
The chemical composition of body fluids and the significance of its variation in disease, with emphasis on instrumentation and the development of analytical skills.		
M.T. 84	Laboratory Analysis	4-8
Supervised practice in the clinical laboratory.		

MUSIC

Mus. 11	Art of Music I	3-3
Music as aesthetic experience. Representative styles from the Middle Ages to the present; major categories such as symphony, oratorio, opera and chamber music.		
Mus. 21	Applied Music	1-2
Techniques of music for prospective teachers of elementary and special classes, largely centered in singing skills. Students who can pass an equivalency examination will be exempted.		
Mus. 30	Art of Music II	3-3
Music's reflection in artistic terms of the values and ideals of societies past and present. Interrelationships between the fine arts. May not be substituted for Mus. 11.		
Mus. 31	Symphony	3-3
Structural and stylistic characteristics of the symphony from the 18th century to the present time.		
Mus. 32	Opera	3-3
Several works from the standard operatic repertoire. The student becomes familiar with some of the significant trends in modern opera.		
Mus. 33	Chamber Music	3-3
The vast area of music for smaller combinations of instruments; literature for the string quartet.		
Mus. 34	Twentieth-Century Music	3-3
The idioms and aesthetic notions of the present century, together with their relationships to the past.		
Mus. 40	Choral Arts	1-2
Singing works from the great corpus of choral music past and present, including dramatic music. Open to the entire student body on audition. No more than 3 semester hours may be applied toward graduation. May be taken for audit.		
Mus. 41	Instrumental Arts	1-2
Small and large ensemble playing of representative works for brass, percussion, woodwind and string instruments. Open to the entire student body on audition. No more than 3 semester hours of		

Mus. 41 or any combination of Mus. 41 and Mus. 40 applied toward graduation. Available for Audit.

Mus. 42 Class Piano 1-2

Practical keyboard usages in classroom work; accompaniment, simple transposition, harmonization of melodies at the keyboard.

Mus. 43 Class Voice 1-2

Principles of voice production. Breath control, phrasing, resonance, diction.

Mus. 44 Song 3-3

Popular, folk, and art songs of many nations; application of such music to the elementary classroom.

Mus. 45 Harmony 3-3

To secure for the student sufficient mastery of four-part harmony to enable him to write harmonizations of simple melodies, as well as to grant him a deeper insight into principles of modulation and key relationships.

Mus. 80 Music in Elementary Education 2-4

The objectives and techniques of music in the first six grades are examined. Music in terms of the abilities and needs of the elementary school child. Includes observation. Prerequisite: Mus. 11 and 21.

Mus. 81 Music in Special Education 2-4

The objectives and techniques of teaching music in special classes. Music in terms of the abilities and needs of the mentally retarded child. Prerequisite: Mus. 11 and 21.

Mus. 82 Workshop in Elementary Music Education 2-4

Modern approaches to professional music education in the elementary school. Observation and individual projects.

Mus. 90 Independent Study in Music 3 hours credit

For students of exceptional ability and interest.

Music Teaching Specialty—Elementary School

This curriculum is designed to give the elementary classroom teacher a special competence in music, with a view particularly to making a teacher capable of introducing music into collaborative teaching techniques. Students will be admitted at the discretion of the music faculty. Conditions for admittance: Keyboard competence of the level of the "Two-Part Inventions" and ability to sing on pitch with a pleasant tone and accurate rhythm. Required courses:

Mus. 11 3-3

Mus. 21 1-2

Mus. 40 and/or 41 (at least three semesters at 1 s.h.)

Mus. 42 1-2

Mus. 43 1-2

Mus. 44 3-3

Mus. 45 3-3

Mus. 82 2-4

NURSING

Nursing 71 A and Nursing 71 B—Foundations of Nursing I and II—are prerequisite to any clinical nursing course in the third year of the curriculum. Nursing courses in the third year of the curriculum are prerequisite to the nursing courses in the fourth year of the curriculum.

A student with an unsatisfactory mark in any of the prerequisite courses will be obliged to withdraw from the program until such time as the course is offered again, which might be an entire year in the case of the course in Foundations of Nursing.

Nursing 70 A Introduction to Nursing

1-1

An analysis of the historical development of nursing as a concept and occupation.

Nursing 70 B Introduction to Nursing

1-1

An analysis or the various approaches to the developing concept of nursing.

Nursing 71 A Foundations of Nursing I

4-7

To develop and implement the broad concepts of patient care. Basic nursing skills, which may be applied to all nursing situations.

Nursing 71 B Foundations of Nursing II

4-7

A continuation of Foundations of Nursing I, which is a prerequisite. Planned clinical experience.

Nursing 72 Nutrition

3-3

Includes the study of the basic elements of the science of nutrition. Food requirements are related to individual need. Budgeting, food purchasing, menu planning, selection, preparation and serving of basic foods.

Nursing 73 A Foundations of Professional Relationships I

1-1

In small group meetings with nursing faculty members, the student is assisted to become more aware of the factors influencing relationships within the student group and with patients.

Nursing 73 B Foundations of Professional Relationships II

1-1

The student is assisted to develop skills in relating to group and individual situations through use of self-understanding.

Nursing 80 Medical-Surgical Nursing

12-24

Focuses on the identification of nursing needs of families during the childbearing and child rearing years which are derived from normal physiological and psychosocial development. Prerequisite: Psych. 22.

Nursing 81 Maternal and Child Health Nursing

12-24

Role of the family in the community. The importance of and principles to protect and preserve, the health of parent and child.

Nursing 82 Advanced Medical-Surgical Nursing 9-20

Critical analysis of nursing problems of the adult and his family. Skill in the application of principles of management in meeting the nursing needs of a group of patients.

Nursing 83 Community and Mental Health Nursing 12-24

Health needs of families and their members from an epidemiological approach. The role of the nurse in assisting families to deal effectively with their health needs - physical, emotional and social - is developed in an interpersonal context. Principles applying to Public Health Science and Dynamic Psychiatry are utilized.

Nursing 87 Introduction to Pharmacology 2-2

The origin, preparation, action, therapeutic use and toxic effects of commonly used drugs with emphasis on the understanding needed by the nurse in the administration of medicines.

Nursing 88 Principles of Management 2-2

The basic elements and principles of management are studied, with consideration of their application to the practice of nursing and to beginning leadership positions in nursing.

Nursing 89 Nursing Seminar 2-2

A survey of the current trends and problems confronting nursing as a profession. The role of the nurse as both an individual and a participant in organizations and groups concerned with these problems.

ORIENTATION

Or. 10 A Introduction to Man and His Knowledge I 1-2

Through discussions, lectures, and readings, this course gives students in all curricula an opportunity to consider the range of man's knowledge. It is designed to help students integrate what they are learning in other general education courses.

Or. 10 B Introduction to Man and His Knowledge II 1-2
Continuation of Orientation 10 A.

Or. 80 Leadership Course in Introduction to Man and His Knowledge

Open to a limited number of Juniors and Seniors who will lead weekly group discussions for Freshmen. Attendance at lectures and a special seminar, as well as a term paper, are required.

PHILOSOPHY

Phil. 10 Introduction to Philosophy 3-3

The broad problems of truth, reality, goodness and beauty through a study of the primary courses of an historical nature, and the contributions of major schools of philosophy such as realism, empiricism and idealism.

- Phil. 30 Logic 3-3
 Precise and logical habits of thinking. Both the theoretical and practical aspects of logic, begining with Aristotelian logic and culminating in an introduction to the principles of symbolic logic.
- Phil. 31 The Philosophy of Plato 3-3
 Plato's theory of ideas, theory of knowledge, ethical and political views, doctrine of fine arts. Readings in selected dialogues.
- Phil. 32 The Philosophy of Aristotle 3-3
 A study of Aristotle's philosophy as seen in his "Metaphysics," "Politics," and "Nicomachean Ethics."
- Phil. 33 The Philosophy of Communism 3-3
 An historical and critical study of Communism, its origins, philosophy, and development as found in the writings of Karl Marx and as it is applied today.
- Phil. 34 Ethics 3-3
 The representative types of ethical systems and problems from Plato to Paul Tillich.
- Phil. 35 Epistemology 3-3
 The problem and method of human knowledge. Various theories of knowledge are presented in the light of Idealism, Realism, Pragmatism, and Existentialism.
- Phil. 36 Metaphysics 3-3
 Introduction to the origin and development of metaphysical problems in Western philosophy.
- Phil. 37 History of Medieval Philosophy 3-3
 A study of the more important philosophers of the Middle Ages including St. Augustine, Boethius, Albertus Magnus, Avicenna, Averroes, Maimonides and St. Thomas along with their influence upon subsequent philosophy.
- Phil. 38 History of Modern Philosophy 3-3
 Emphasizes the more important and representative trends of modern thought since the Renaissance, including Descartes, Locke, Spinoza, Leibniz, Hume, Kant, and Hegel.
- Phil. 39 Contemporary Philosophy 3-3
 An analytical and historical study of contemporary thought from Nietzsche to Whitehead.
- Phil. 40 Existentialism 3-3
 The origin of contemporary existentialism; its leading ideas as seen in the writings of Kierkegaard, Heidegger, Jaspers, and Sartre.
- Phil. 41 American Philosophy 3-3
 An historical survey and related readings in American philosophy from the Colonial period through the 20th century. Emphasis will be placed on the contemporary scene including Pierce, James, Royce, Santayana, and Dewey.

Phil. 42 Political and Social Philosophy 3-3
 The various political and social ideas beginning with Plato and continuing to Marx.

Phil. 80 Educational Philosophy 3-3
 A guide to the philosophical treatment of educational problems. Employs the synoptic, critical and systematic areas of philosophy.

Electives and Special Field Requirements

Students in the Liberal Arts Curriculum who elect a minor in Philosophy will select their courses from among those in the 30 and 40 series. Other students with free electives may also select courses from this list. Prerequisite: Phil. 10.

PHYSICAL EDUCATION MEN AND WOMEN

Instruction in the four required physical education courses includes the development of the following in selected sports activities:

1. Physical Conditioning
2. Motor Skills
3. Knowledge, Rules, Techniques and Strategies
4. Qualities, Leadership, Competitiveness, Cooperation, etc.

P.E. 01A Physical Education I 0-2

Instruction is offered in soccer, touch football, field hockey, swimming.

P.E. 01B Physical Education II 0-2

Instruction is offered in tumbling, basketball, apparatus, track and field, dance (folk and square).

P.E. 02A Physical Education III 0-2

Instruction is offered in archery, weight training, tennis, dance (modern), badminton.

P.E. 02B Physical Education IV 0-2

Instruction is offered in handball, golf, wrestling, apparatus, softball.

Physical Education Adaptive Course

The adaptive course of physical education is offered for those students who, because of some functional or structural deficiency, are temporarily or permanently unable to take part in the regular program. The activities offered will be determined by the needs of each individual student according to the advice of the family physician. In extreme cases of partial or total disability, consideration will be given to a waiver of the physical education requirement.

P.E. 08 First Aid 0-2

The official Red Cross Standard course is required for students in all curricula except Nursing.

P.E. 80 Physical Education in the Elementary School 1-2
 Theory and practice course designed to guide the classroom teach-

er in organizing a comprehensive program of physical education activities based upon physiological, sociological, and psychological needs of elementary children with practice teaching of stunts, tumblings, and rhythemics.

P.E. 81 Physical Education for Secondary Schools 3-3

Pertinent background material for organizing and conducting an integrated activity program for junior and senior high school boys.

P.E. 82 Fundamentals of Coaching 3-3

For the prospective teacher-coach. An analysis of the principles and practices of coaching in various sports.

PHYSICS

Phys. 10 General Physics 3-4

A general survey of classical and modern physics. Emphasis on fundamental principles and their practical applications. Required of all Industrial Arts students.

Phys. 21 A Introductory Physics I 3-4

A survey of classical and modern physics. The topics include the conservation laws, structure of matter, mechanics, and wave motion. Required of Biology majors.

Phys. 21 B Introductory Physics II 3-4

A continuation of Physics 21 A, dealing with the topics of electricity, magnetism, optics, and some atomic and nuclear physics. Prerequisite: Phys. 21 A.

Phys. 30 A General Physics I 4-5

Kinematics, dynamics, Newtonian mechanics of translation and rotation, kinetic molecular theory, Kepler's Laws of Motion. Required of all Mathematics, Chemistry, and Physics majors.

Phys. 30 B General Physics II 4-5

A continuation of Physics 30 A. Electrostatics, electromagnetism, circuit theory, wave motion, physical and geometric optics. Calculus will be used occasionally.

Phys. 31 Modern Physics 3-3

Special theory of relativity, atomic structure, spectra, the quantum theory, the nucleus and radioactivity. Prerequisite: Physics 30 A and 30 B.

Phys. 32 Electronic Physics I 4-5

Foundations of electromagnetic theory, including electrostatics, dielectric theory, electromagnetism, magnetic properties of matter, and alternating currents. Prerequisite: Phys. 30 A and 30 B.

Phys. 33 Electronic Physics II 4-5

An introductory course in basic electronic phenomena, covering topics in elementary circuit theory, electron emission, vacuum tube characteristics, vacuum tube circuits, transistors and transistor circuits. Prerequisite: Phys. 32.

Phys. 34 PSSC Physics	3-4
For prospective Secondary physics teachers. The concepts, demonstrations, and experiments contained in the Secondary physics course prepared by the Physical Science Study Committee. Prerequisite: Phys. 30 A and 30 B.	
Phys. 35 A Mathematical Physics I	3-3
Development of mathematical methods and applications in selected physical topics. Classical mechanics, relativity, quantum mechanics, and statistical mechanics. Prerequisite: Upper-class standing in Physics, Chemistry, or Mathematics.	
Phys. 36 Optics	4-5
An introductory course in geometrical and physical optics including reflection, refraction, lens theory, interference, diffraction, and line spectra. Laboratory experiments are an integral part of the course. Prerequisite: Phys. 30 A and 30 B.	
Phys. 38 Solid State	3-3
An introduction to the structure, properties and behavior of solids. Both the physics and chemistry of solids. The principles that relate the properties and behavior of different materials to their structure and environment. A major part of the course is concerned with the building of close-packed and lattice models of crystal structures. Prerequisite: General Physics, Chemistry, and Algebra.	
Phys. 40 Intermediate Mechanics	3-3
An analytical treatment of classical mechanics covering the methods of statics and dynamics of particles and rigid bodies, both in a plane and in space, and the application of these methods to physical problems; oscillations; and Lagrange's Equations. Prerequisite: Math. 37.	
Phys. 41 Computer Fundamentals	3-3
Elements of programming, digital computers. Applications of computers to problem solving, especially approximate solutions for initial value problems and boundary value problems. Applications of analog computers may be considered. Prerequisite: Math. 33.	
Phys. 43 Advanced Laboratory	3-5
A few experiments, using fairly sophisticated apparatus, will be performed by the student. The experiments will be from different areas of physics. The student will be expected to consult various sources including the original source, if available.	
Phys. 88 Physics Methods	3-3
Special techniques for the teaching of physics are stressed.	
Phys. 90 Independent Study	3-3
Laboratory research under guidance of physics staff. Prerequisite: Permission of instructor.	

PSYCHOLOGY

Psych. 10 General Psychology 3-3

The science of human behavior. Scientific method, maturation, motivation, emotions, sensation, perception, learning, personality, adjustment.

Psych. 20 Adolescent Psychology 3-3

The significance of psychological factors in the adjustment of the adolescent to his peers, family, school, society. Prerequisite: Psych. 10.

Psych. 21 Child Psychology 3-3

Interaction of the maturational stages with environmental influences from conception to puberty. Prerequisite: Psych. 10.

Psych. 22 Human Growth and Development 3-3

The life span of man with reference to physiological, social and psychological processes. Prerequisite: Psych. 10.

Psych. 23 Principles of Guidance 3-3

Introductory course dealing with development of major services including an overview of counseling, occupational information, group procedures and other specialized aspects of a guidance program. A beginning course for anyone interested in guidance either as a classroom teacher or a specialist.

ELECTIVES

Psych. 30 Mental Hygiene 3-3

Factors governing the adjustment of the individual to his environment mentally, physically, emotionally, socially. Prerequisite: Psych. 10.

Psych. 31 Social Psychology 3-3

Psychological constructs and concepts applied to the interaction between human beings. Prerequisite: Psych. 10.

Psych. 35 Psychology of Personality 3-3

Dynamic factors in personality formation are followed through approximate sequences of the life periods. Major theories and assessment. Prerequisite: Psych. 10.

Psych. 36 Learning and the Culturally Disadvantaged 3-3

Factors in the gap between cultural background and learning experiences of the culturally deprived child. Ways in which the school can supplement and counteract the antisocial learning of these children.

Psych. 70 Psychology of Learning 3-3

Nature and fundamental principles of learning. Effective learning procedures and conditions.

Psych. 80 Educational Measurements 3-3

Basic statistical concepts and techniques to measure pupil achievement, aptitude, personality. Application of teacher-made tests, standardized tests and others. Prerequisite: Psych. 10.

Psych. 81 Psychology of Speech and Communication 3-3

Fundamental importance of speech and communication as an aspect of the whole personality. Origins of speech and language, psychological factors affecting the development of speech, disturbances in the communication behavior of the speaker, voice and personality, emotional aspects of hearing and listening, and the psychological implications of "silence."

SCIENCE

(Also see Biology, Chemistry and Physics)

Sc. 20 A and 20 B Physical Science I and II 3-4

The solar system, motion, energy, electricity, structure of matter, atomic structure, chemical combination and atomic energy.

Sc. 30 Geology 3-4

Physical and historical geology. Special attention to recent glaciation in New England. Laboratory work includes field trips study of rocks, minerals, fossils.

Sc. 31 Astronomy 3-4

Motions of the earth, moon and planets including measures of time and space. Properties of reflecting and refracting telescopes. Some of the properties of stars. A 62mm refractor telescope and a 6-inch reflector telescope are available. Some evening laboratories.

Sc. 32 Earth, Sea and Air 3-4

The earth as a planet, sun-moon-earth relations, earth measurement; the lithosphere, theories of its formation and change, and rock structure; the hydrosphere, properties of water, currents and tides; and the atmosphere, winds and weather. Emphasizes the scientific theories and concepts behind phenomena. Some selected experiments are performed.

Sc. 81 Science in Elementary Education 3-4

Recommendations of professional organizations are considered and new curriculum groups examined. Students select and test experiences, become familiar with materials of elementary science, and develop devices and experiences.

Sc. 88 Science Methods for Secondary Teaching 3-3

Aims, objectives; patterns of curriculum development. Emphasis on the demonstrations, experimental projects, field trips and problems students encounter in their practice teaching.

Elective and Special Field Requirements

Students majoring in Elementary Education with a specialization in Science must complete a minimum of 15 semester hours of Science beyond the required Bio. 10A and B and Sc. 20A and B including a field science, and earth science.

SOCIAL SCIENCES

(Also see History and Geography)

- S.S. 21 Introduction to Sociology 3-3
 Structure and process in the organization of groups, with consideration of development, maintenance and change variables.
- S.S. 22 Introductory Economics 3-3
 The organization and functions of economic society and the interrelated process of production, distribution and consumption. Current problems are emphasized.
- S.S. 30 Comparative Government 3-3
 Govermental philosophies and their differing political climates. The American system receives special emphasis.
- S.S. 31 Introduction to Political Science 3-3
 A comparative analysis of democratic and totalitarian political systems: the United States, Britain, France, Germany, and Russia.
- S.S. 32 Introductory Anthropology 3-3
 The types, range and diversity in human cultures and cultural institutions, past and present. Cultural evolution. The relationship of culture and personality.
- S.S. 33 Community Analysis 3-3
 Introduction to the theory and practice of community organization. Field study: observation and analysis of social institutions in Fitchburg and neighboring communities.
- S.S. 34 Urban Sociology 3-3
 Investigation of the role of the city in history and in modern life; the various forms developing in urban societies and the influence these forms have on personal and group living.
- S.S. 35 Classical and Medieval Political Philosophy 3-3
 The writings of the great figures in the development of classical and medieval political thought.
- S.S. 36 The American Political System 3-3
 An examination of American government, with special emphasis on the unique American economic, historical, ideological, and social context.
- S.S. 37 Modern Political Philosophy 3-3
 An analysis of the development of political thought from the Renaissance to the present-day behavioral movement.

SPECIAL EDUCATION

- Sp. Ed. 20 Nature and Needs of the Mentally Retarded 3-3
 Characteristics of both educable and trainable children, methods of classification, and causes of mental retardation. Responsibility of community and school in providing for the mentally retarded.

Sp. Ed. 21	Home Arts	3-6
	Food, clothing and other home-arts areas for those who will teach and work with the mentally retarded. Food buying, preparation, table service; meal planning; basic nutrition; elementary etiquette; good grooming; simple sewing; clothing selection and care.	
Sp. Ed. 24	Exceptional Children	4-4
	Etiology, classification, problems of children who have physical disability, mental retardation, emotional or social difficulties, giftedness. Clinical observations and consultations.	
Sp. Ed. 71	Curriculum for the Trainable Child	3-3
	Analyzes special problems of curriculum development for the trainable child and evaluates curriculum materials and resources. Emphasis on content appropriate to the areas of language arts, quantitative thinking, social and civic responsibility.	
Sp. Ed. 72	Problems in Language Arts for Mentally Retarded	3-3
	Students identify, develop, and use resources related to the classroom problems in language areas. The stages of development and deviations of the exceptional child. Current research, diagnosis, and improvement of practical language usage.	
Sp. Ed. 73	Seminar in Mental Retardation	3-3
	Approaches to educational research and the study of significant problems in mental retardation. Students appraise and apply resources in the development of their research problem.	
Sp. Ed. 74	Industrial Skills and Analysis of Job Areas	3-3
	A laboratory course providing technical knowledge and instruction of industrial skills appropriate for the mentally retarded. Practical experience related to communal needs in job analysis.	
Sp. Ed. 80	Methods of Teaching the Mentally Retarded	3-3
	The organization and planning of activities and materials for mentally retarded children at different maturational levels. Study of current research related to the application of learning patterns.	
Sp. Ed. 82	Curriculum for the Mentally Retarded	3-3
	Appropriate structures. Emphasizes development of learning, language arts, quantitative thinking, social and civic responsibilities, pre-vocational experiences.	
Sp. Ed. 83	Reading in Special Education	3-3
	Reading instruction, materials, and diagnostic tests. Children's reading difficulties, preventive and remedial techniques, current reading materials with emphasis on Speech-Education curriculum adjustment. Classroom observation.	
Sp. Ed. 85	Student Teaching	12-25
	Senior students have eighteen weeks of complete classroom responsibility, guided by cooperating teacher, college supervisor and professional personnel from other disciplines, in teaching varied levels of retardation in public schools and institutions.	

Sp. Ed. 90 Independent Study 3-3

Each student is encouraged to review, develop and synthesize a problem in the field of Special Education. Opportunities for consulting and visiting agencies to identify the needs of exceptional children.

SPEECH

Sp. 01 Speech Improvement 1-0

Remedial course. Students are assigned to the program after diagnosis and recommendations of need for speech improvement. Individual and group therapy.

Sp. 10 Speech 2-2

Effective organization and delivery of speeches, oral interpretation of literature, techniques of intelligent criticism. Forums, panel discussions, parliamentary procedure.

Sp. 80 Introduction to Speech Disorders 3-3

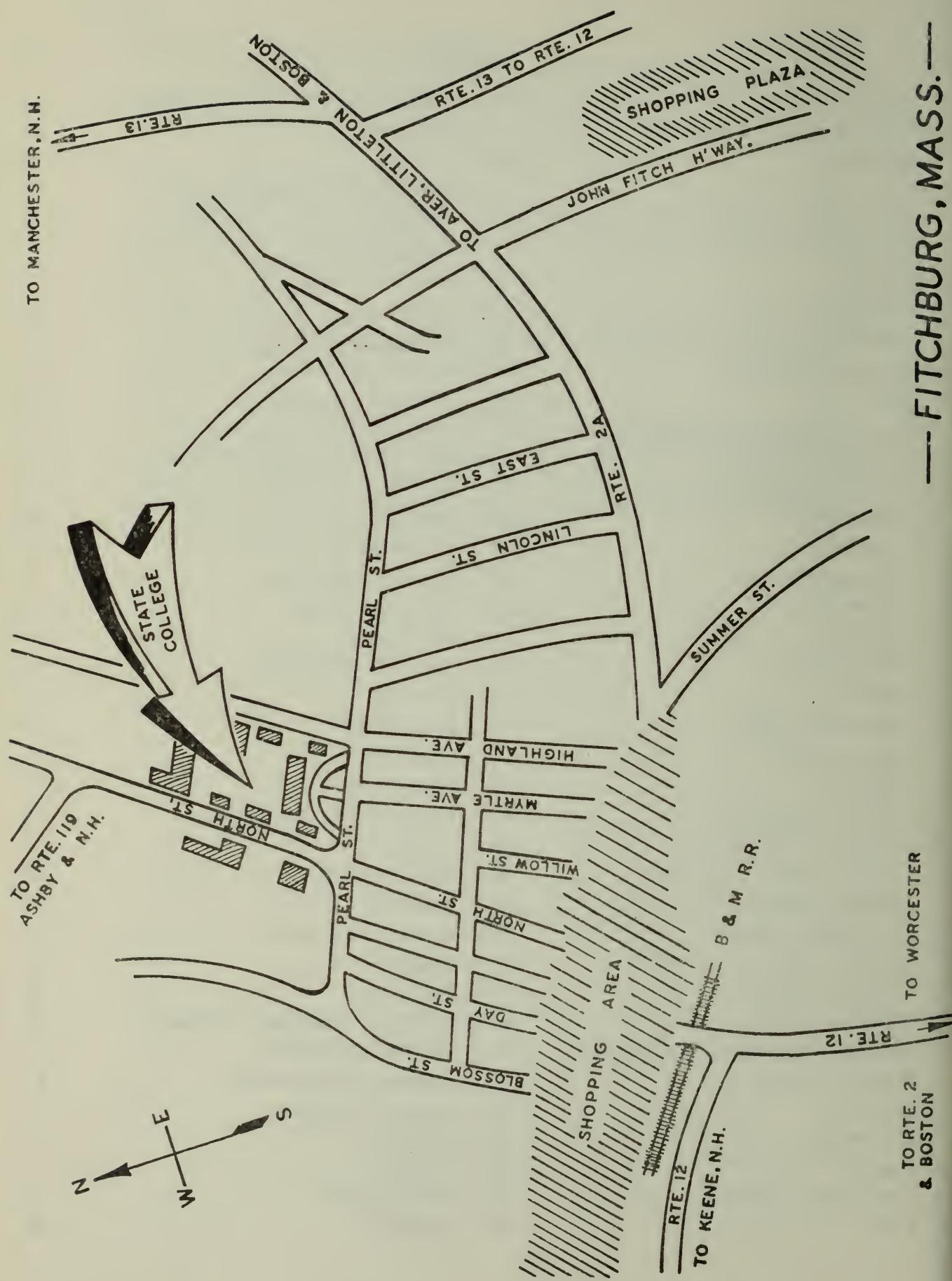
Designed for the prospective classroom teacher. Introduction to diagnostic and therapeutic techniques with the more common types of speech disorders: articulation, voice-delayed speech, stuttering and speech disorders associated with mental retardation, hearing problems, cerebral palsy, and cleft palate.

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— FITCHBURG, MASS. —



TO RTE. 2
& BOSTON

TO WORCESTER

RTE. 12
TO KEENE, N.H.

B & M R.R.
RTE. 12

SHOPPING AREA

SUMMER ST.

RTE.
2A

HIGHLAND
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MYRTLE
AVE.

WILLOW ST.

NORTH
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BLOSSOM ST.

DAY
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PEARL
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TO RTE. 119
ASHBY & N.H.

TO MANCHESTER, N.H.

RTE. 13 TO BOSTON

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COLLECTOR'S
WARDROBE
COLLECTION

NON-CIRCULATING

